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ABSTRACT

This report provides data on the National Food Service Management Institute's multi-year research project that identified type, style, age, and condition of available food service equipment in K-12 schools nationwide. The study found that smaller schools, serving less than 400 lunches per day, had kitchens equipped with ranges, small steam-jacketed kettles, convection ovens, under-range ovens, and manual slicers. No school met the standard for all preparation equipment. Moderate sized schools serving 401-700 lunches were the most well equipped. Generally, as schools increased in size the adequacy of equipment decreased. No school met the standard for all eight pieces of production equipment or holding equipment for the large size schools serving 701-1000 lunches. Findings also reveal the schools at the two size extremes to be the least equipped to prepare healthful foods to meet the Dietary Guidelines for Americans (DGA) standards. The study recommends that Child Nutrition Programs evaluate their equipment based on the menu served, that emphasis be placed on helping schools evaluate equipment needs to meet DGA standards, and that managers should be encouraged to be creative in menu planning and use of equipment to meet DGA standards. An appendix provides sample questionnaires used in the study. (GR)

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Available Equipment in School Foodservice

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AVAILABLE EQUIPMENT IN SCHOOL FOODSERVICE

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PREFACE

Research conducted by the National Food Service Management Institute has indicated that facility layout and design and equipment purchasing are important job functions of school foodservice directors. In 1994, the National Food Service Management Institute initiated a multi year project to identify type, style, age and condition of available food service equipment in elementary, middle and high schools nationwide. This report focuses on the availability of equipment related to the implementation of the *Dietary Guidelines for Americans.*

This research project was designed by Drs. Mary Gregoire and Mary Frances Nettles. Dr. Nettles developed and implemented the survey instruments. The data for this report were analyzed by Dr. Mary Kay Meyer. Ms. Jewel Adams gave valuable assistance in the preparation of this document. We would also like to thank the food service directors who participated in this phase of the research project.

Martha Conklin, PhD, RD
Director of Applied Research

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Acting Executive Director

TABLE OF CONTENTS

Preface ii

Table of Contents iii

Executive Summary iv

Introduction 1

Appendix 65

AVAILABLE EQUIPMENT IN SCHOOL FOODSERVICE

EXECUTIVE SUMMARY

In 1990, the United States Department of Agriculture (USDA) and the U.S. Department of Health and Human Services issued the third edition of *The Dietary Guidelines for Americans* (DGA) (U.S. Department of Agriculture and Health and Human Services, 1990). The National School Lunch and Breakfast Programs were mandated to comply with the nutrition recommendations of the DGA by the school year of 1998 (with waiver). Proper equipment is essential for production of meals to meet these guidelines. The most recent large scale study to examine foodservice equipment in schools was conducted by USDA in 1980 (Puma, 1983). No research has been published on the use of foodservice equipment in relationship to implementing the DGA.

METHOD

Research scientists at the National Food Service Management Institute (NSFMI) initiated a multi-year, multi-phase project to examine production equipment issues related to the implementation of the DGA. This phase involved a survey of foodservice directors concerning the number and style of a variety of production, holding, and service equipment.

These results on the type, style, and quantity of various pieces of equipment were then compared with the recommendations for equipment needed to prepare school meals meeting the DGA by Nettles and Carr (*Guidelines for Equipment to Prepare Healthy Meals*, NSFMI, 1996).

MAJOR FINDINGS

It was found that smaller schools serving less than 400 lunches per day had kitchens equipped with ranges, small steam jacketed kettles, convection ovens, under range ovens, and manual slicers. Few had steamers, large steam jacketed kettles, tilting braising pans, heated holding cabinets or food processors. No school in this category met the standard for all preparation equipment. Four schools met the standard for seven of the eight pieces of equipment. For the holding equipment, 89 schools met the standard. The moderate sized schools serving 401-700 lunches were the most well equipped. Steamers were found in a higher percentage of these schools. However, no school met the standard for all eight pieces of production equipment. One school met seven of the eight standards. Thirty-three (33) met the standard for holding equipment. Generally as schools increased in size the adequacy of equipment decreased.

Refrigeration, however, was more than adequate in a majority of the kitchens sampled. No school met the standard for all eight pieces of production equipment or holding equipment for the large size schools (701-1,000 lunches).

CONCLUSIONS

Schools at the two extremes of the size spectrum are of greatest concern. Data showed these two extremes were least equipped to prepare healthful foods to meet the DGA.

The DGA recommends a maximum of 30% of calories from fat and the majority of calories from grains, fruits and vegetables. Steamers and convection ovens can be used to prepare foods with lower fat content and maintain maximum nutrients. Slightly more than half (51%) of those participating had any style of steamer. Convection ovens, however, were in many schools. Only 10% reported having none. The majority of schools (58%) did have deep fat fryers, however, the usage was not assessed.

Food safety is critical to the health of our students. Few kitchens (23%) reported having heated holding cabinets. If batch cooking is not practiced on all hot foods, some means of keeping foods at the proper temperature and quality are essential.

RECOMMENDATIONS

- Child Nutrition Programs should evaluate their equipment based on the menu served. The recommended menu to meet the DGA is lower in fat and higher in grains, fruits and vegetables than in the past. The proper equipment is essential to meet these guidelines.

- Child Nutrition Programs at each end of the size spectrum are of particular concern with regards to available equipment. Emphasis should be placed on helping these schools evaluate equipment needs in order to prepare and serve meals that meet the DGA.

- Managers should be encouraged to be creative with menu planning and use of equipment to meet the DGA. Training should be developed to assist them with this.

AVAILABLE EQUIPMENT IN SCHOOL FOODSERVICE

INTRODUCTION

In 1990, the United States Department of Agriculture (USDA) and the U.S. Department of Health and Human Services issued the third edition of *The Dietary Guidelines for Americans* (DGA) (U.S. Department of Agriculture and Health and Human Services, 1990). The guidelines included the following recommendations: levels of fat, saturated fat, and cholesterol in the diet should be reduced; sugar, salt, and sodium should be used in moderation; and the consumption of fruits, vegetable, and grain products should be increased. The National School Lunch and Breakfast Program was mandated to comply with the nutrition recommendations of the DGA school year 1998.

Proper equipment is essential for production of meals to meet these guidelines. The menu is the core of any foodservice operation. Equipment needs should be based on the menu served. The most recent large scale study to examine foodservice equipment in schools was conducted by USDA in 1980 (Puma, 1983). Nettles and Carr (1996) developed recommended guidelines for equipment needed to meet the DGA in conventional kitchens for schools serving less than 400 meals, 401 to 700 meals and 701 to 1,000 meals (Figure 1). No research has been published on the use of foodservice equipment in relationship to implementing the DGA.

Figure 1 Preparation Equipment Guidelines for Conventional Kitchens

Preparation Equipment	Meals Prepared Per Day		
	< 400	401-700	701-1000
Convection Ovens	(1) stacked	(2) stacked	(3) stacked
Tilting Brazing Pans	(1) 23 or 30 gal	(1) 23 or 30 gal and (1) 40 gal	(2) 40 gal
Kettles	(1) 10 gal	(1) 10 gal	(1) 10 gal and (1) 20 gal
Steamers	(1) 2 compartment	(1) 2 compartment	(2) 2 compartment
Ranges	(1) 2-burner	(1) 2-burner	(1) 2-burner
Mixers	(1) 60 qt with 30 qt attachments	(1) 60 qt with 30 qt attachments	(1) 30 qt and (1) 60 qt
Slicers	(1) automatic	(1) automatic	(2) automatic
Food Processors	(1) table top	(1) table top	(1) table top
Heated Cabinets Pass-thru or Reach-in	1 section	2 section	3 section
Refrigerators Pass-thru or Reach-in	1 section	2 section	2 section

Research scientists at the National Food Service Management Institute (NSFMI) initiated a multi-year, multi-phase project to examine production equipment issues related to implementation of the DGA. This is the third phase of that project. The purposes of this phase were to:

1. Identify equipment available in child nutrition programs.

2. Compare the available equipment to recommended guidelines of Nettles and Carr (1996).

METHOD

Research scientists at the National Food Service Management Institute (NSFMI) are conducting a multi-year, multi-phase project to examine production equipment issues related to the implementation of the DGA. Phase one involved a survey of foodservice directors concerning their views on the appropriateness of 31 pieces of equipment and their agreement with 37 recommendations regarding equipment use in schools (Nettles, 1996). The second phase involved the development of recommended guidelines for equipment to be used in schools to meet the DGA (Nettles and Carr, 1996). Phase three involved two surveys assessing availability and style, of twenty separate pieces of food preparation equipment and twenty pieces of holding and serving equipment. Foodservice directors participating in the first phase of this project were asked to participate in phase three. This phase involved a survey of 196 elementary, 195 middle and 196 high schools foodservice directors for each of the two surveys.

Questionnaires

Two mail surveys were used in this study. A separate survey was used for preparation, and holding and service equipment. The survey on preparation equipment was composed of 20 questions. Each question had several parts to assess availability and style of the equipment. A similar format was used for the holding and service equipment survey. Surveys are found in the Appendix.

Data Analysis

All data were analyzed using the *SPSSx* statistical analysis package. Data were tabulated in groups representing the number of lunches prepared (less than 400, 401-700 and 701-1,000). This tabulation was then compared to Nettles and Carr's (1996) recommendations for equipment needed to prepare healthy meals.

RESULTS

Rate of Return

Three hundred ninety-nine (399) returned the production equipment survey for a return rate of 68%. Three hundred eighty (380) returned the holding and serving equipment survey for a return rate of 64.7%. Of those returning the production equipment survey 70% were foodservice directors. Many (32%) had worked in that position for five or less years, 29% five to ten years, and 29% eleven to twenty years. The majority (70%) of those returning the holding and serving equipment survey were foodservice directors. Of those directors 30% had worked five or less years, 33% five to ten years and 25% eleven to twenty years in that position.

Major Findings

It was found that smaller schools serving less than 400 lunches per day had kitchens equipped with ranges, small steam jacketed kettles, convection ovens, under range ovens, and manual slicers. Few had steamers, large steam jacketed kettles, tilting braising pans, heated holding cabinets or food processors. No school in this category met the standard for all preparation equipment. Four schools met the standard for seven of the eight pieces of equipment. For the holding equipment, 89 schools met the standard. The moderate sized schools serving 401-700 were the most well equipped. Steamers were found in a higher percentage of these schools. However, no school met the standard for all eight pieces of production equipment. One school met seven of the eight standards. Thirty-three (33) met the standard for holding equipment. Generally as schools increased in size, the adequacy of equipment decreased. Refrigeration, however, was more than adequate in a majority of the kitchens sampled. No school met the standard for all eight pieces of production equipment or holding equipment for the large size schools (701-1,000).

Cooking Equipment

Convection Ovens

Of the 399 participating in the study 361 had convection ovens (Table 1). Of the 210 school producing 400 lunches or less, 183 had convection ovens (Table 2). Forty-one had only one single and forty-nine had two singles. Seventy-nine met the standard with one double or two single ovens. Fifteen schools had four convection ovens. As the number of lunches increased more schools had convection ovens. The majority of schools producing 401-700 lunches had at least one (Table 3). Forty-seven had two doubles and 15 four singles which met the standard. Nineteen had four doubles and one had six doubles. Those schools, with the exception of three, producing over 700 lunches had convection ovens (Table 4). The majority had two or four.

Only six met the standard of three doubles. Twenty-six, however had four doubles, seven had six doubles and one had eight doubles.

Deck Ovens/Stack Ovens

Because deck or stack ovens have been used for many years in food services, data were gathered on this piece of equipment. This piece of equipment was, however, not included in the recommended guidelines of Nettles and Carr (1996). Of the 399 respondents, 102 had these ovens (Table 5). The majority had one or two ovens, however, 19 reported having three or more. In the small school category serving less than 400 lunches per day, 55 had deck ovens (Table 6). In the moderate category serving 401-700 lunches per day, only 32 had deck ovens (Table 7). Of the 60 large schools serving over 700 lunches per day, 14 reported having this type oven (Table 8).

Range Ovens

Because ranges are generally equipped with ovens under the range top, data were gathered on this feature of the range. Of the 399 responding to the survey, 231 had ovens under the range top (Table 9). One hundred thirty-two (132) of the 231 reported having one and 83 reported having two. Those kitchens serving less than 400 lunches had the majority of ovens under the range with 78 having one and 50 having two. Few were reported in the other two categories.

Combination Convection Oven/Steamers

This is a relatively new piece of equipment to school foodservice operations. It has the versatility of a steamer and heating range of a convection oven. Few of the directors responding to the survey reported having this type of oven. Of the 399 in the sample 49 had this style oven (Table 10).

Deep Fat Fryers

Fryers have been a staple piece of equipment in foodservices for many years. The results of this study showed that 230 of the 399 participating reported having fryers (Table 11). A smaller percentage in the small category, producing less than 400 lunches, reported having deep fat fryers than the other categories. The most common size of fryer was the 40-50 lb. capacity. Even the small school category reported this as the most frequently used.

Tilting Braising Pan

Tilting Braising Pans were reported in only 153 of the 399 schools (Table 12). The most common size reported was 30 gallon (Table 13). Of the 210 serving less than 400, only 63 had tilting

braising pans (Table 14). Sixteen were 30 gallon and 30 were 40 gallon. Of the 129 schools serving between 401-700 lunches, 58 had braising pans (Table 15). Fifteen were 30 gallon and 30 were 40 gallon. In the larger schools, of the 60 only 32 had tilting braising pans (Table 16). Ten were 30 gallon and sixteen 40 gallon. One school had four 40 gallon tilting braising pans.

Steam Jacketed Kettles

Of the 399 participating in the survey, 224 reported having some size of steam jacketed kettle (Table 17). In the category serving less than 400 lunches, 97 of the 210 schools had steam jacketed kettles (Table 18). Of those with kettles many were less than six gallon capacity. No school met the standard. Forty-nine had one 40 gallon and 12 had two 40 gallon kettles. Seven had one or more 60 gallon kettles. In the moderate school size serving between 401-700 lunches, 87 had kettles (Table 19). Fewer, only 9 had small 6 gallon kettles. Three met the standard. Thirty-seven had one 40 gallon and 15 had two. Only seven had above 40 gallon kettles. In the large school category, 40 of the 60 responding had kettles (Table 20). Three had kettles less than 6 gallons. The most common size was 40 gallon with 30 schools having one or more.

Steamers (Pressureless/Convection/Low Pressure/High Pressure)

All types of steamers were included in the analysis. This correlates with the Nettles and Carr recommendation (1996). Slightly more than half (202) of those participating reported having some style of steamer (Table 21). Tables 22-26 give specific information on the type and style of steamers reported. Of the 210 schools serving less than 400 lunches per day only 93 had any style steamer (Table 27). Fifty-three (53) of those with steamers had double steamers and 13 reported having another style. Seventy-two (72) of the schools serving 401-700 lunches per day had steamers, 40 were doubles (Table 28). Thirty-eight (38) of the 60 large school reported having steamers (Table 29). Of those 14 had doubles, and 9 reported having 3 or more. Only five met the standard with 2 doubles.

Ranges

Few schools reported having no ranges or just one burner (Tables 30 and 31). The majority of schools had four or six burners. Some reported having as many as nine.

Preparation Equipment

Mixers

Of the total 399 sampled, 380 reported having mixers (Table 32). The presence of attachments was not measured. In the category of schools serving less than 400 lunches, 51 directors reported having 20 quart; 41 having 30-40 quart, and 22 having 60 quart mixers (Table 33). One hundred

thirty-eight (138) reported having more than one mixer of greater than 20 quart capacity. For those schools of moderate size serving 401-700 lunches per day, the common size mixers were 20, 40 and 60 quart (Table 34). Forty (40) reported having two 20 quart, 39 having two 30-40 quart and 25 having two 60 quart. One school reported having three 80 quart mixers. In the large school category only 21 had a 60 quart mixer (Table 35). Five reported having more than one 60 quart mixer and two had 80 quart mixers. The most common sizes were 20, 40 and 60 quarts.

Slicers

The vast majority, 107 of 188, had one manual slicer (Tables 36-40)). Less than 30 of the entire sample reported having no slicer.

Food Processors

Only 133 of the 399 schools participating had food processors (Table 41). A large percentage of those with food processors had commercial style units (Table 42). Tables 43-45 show the breakdown according to the number of lunches produced. Because of the low number reporting having food a processor, the "n" value in each category is low.

Holding Equipment

Heated Cabinets for Hot Foods

Holding hot food above the danger zone of 140° F is critical for food safety. Of the 380 responding to this survey, 87 had no heated holding cabinets (Table 46). Two (2) of the 380 reported having holding cabinets that were not heated. A one section heated cabinet was recommended (Nettles and Carr, 1996) for schools serving less than 400 lunches, two sections for those serving 401-700, and three sections for those serving 700 - 1,000. Table 47 shows that few schools met this standard. Tables 48-49 show the number of heated not insulated and heated insulated cabinets reported.

Reach-in or Pass Through Refrigerators

Of the 380 responding to this question, 250 had reach-in or pass-though refrigeration (Table 50). Those having this type of refrigeration had more than the recommended (Table 51). In the small school category, 18 had at least one section, however, 130 had more than recommended (Table 52). In the moderate and large school category, more than adequate refrigeration was reported (Tables 53 and 54).

CONCLUSIONS

Schools at the two extremes of the size spectrum are of greatest concern. Data showed these two extremes were least equipped to prepare healthy foods to meet the DGA.

The DGA recommends a maximum of 30% of calories from fat and the majority of calories from grains, fruits and vegetables. Steamers and convection ovens can be used to prepare foods with lower fat content and maintain maximum nutrients. Slightly more than half (51%) of those participating had any style of steamer. Convection ovens, however, were in many schools. Only 10% reported having none. The majority of schools (58%) did have deep fat fryers, however, the usage was not assessed.

Food safety is critical to the health of our students. Few kitchens (23%) reported having heated holding cabinets. If batch cooking is not practiced on all hot foods, some means of keeping foods at the proper temperature and quality are essential.

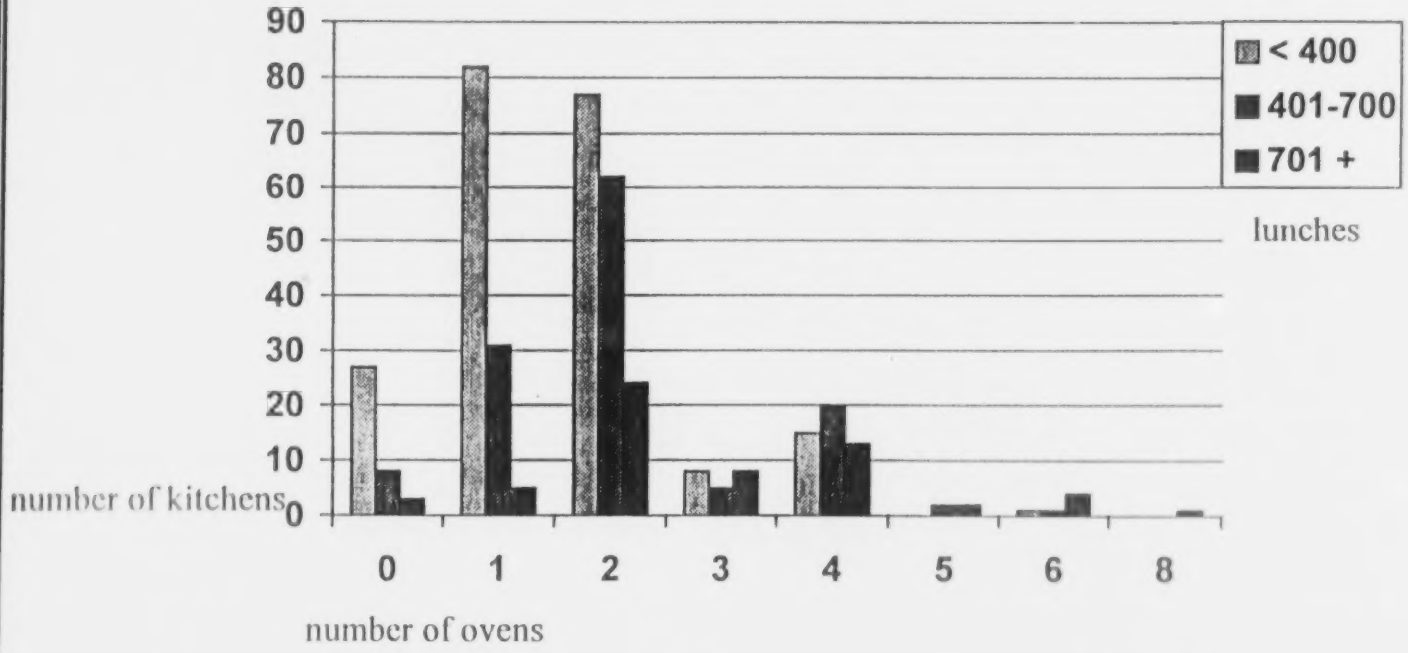
RECOMMENDATIONS

- Child Nutrition Programs should evaluate their equipment based on the menu served. The recommended menu to meet the DGA is lower in fat and higher in grains, fruits and vegetables than in the past. The proper equipment is essential to meet these guidelines.

- Child Nutrition Programs at each end of the size spectrum are of particular concern with regards to available equipment. Emphasis should be placed on helping these schools evaluate equipment needs in order to prepare and serve meals that meet the DGA.

- Managers should be encouraged to be creative with menu planning and use of equipment to meet the DGA. Training should be developed to assist with this.

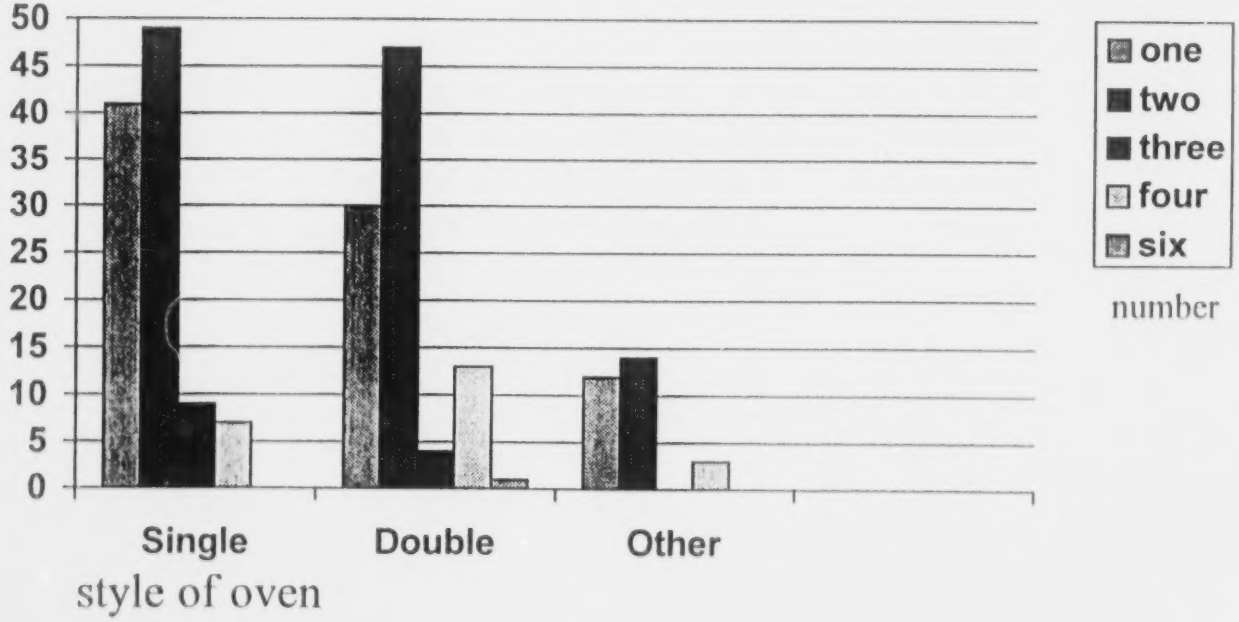
Table 1 Convection Ovens n=399



Guidelines:

< 400	(1) double
401-700	(2) double
701-1,000	(3) double

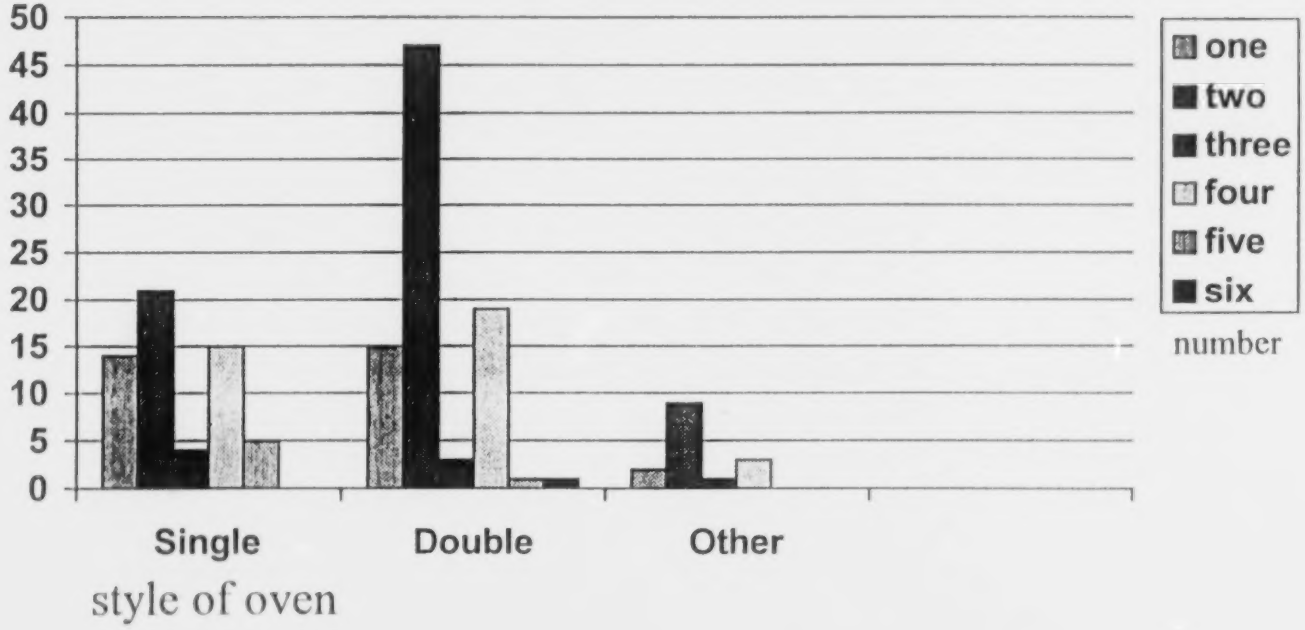
Table 2 Convection Ovens
< 400 Lunches n=210



Guidelines:

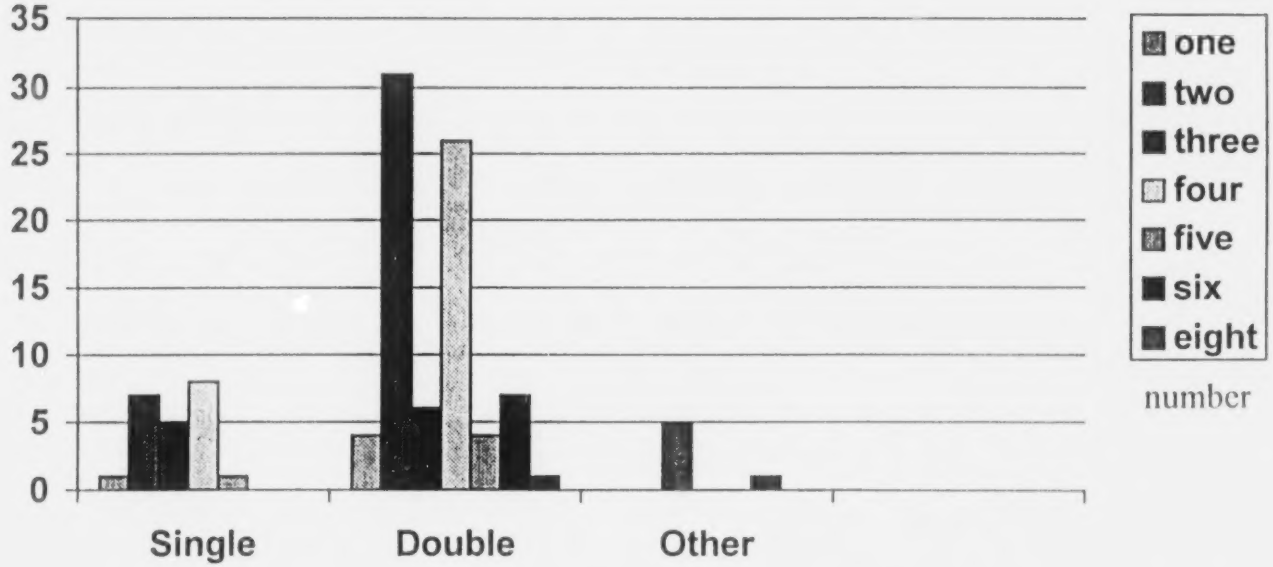
< 400	**(1) double**
401-700	(2) double
701-1,000	(3) double

Table 3 Convection Ovens
401-700 Lunches n=129



Guidelines: < 400 (1) double
401-700 (2) double
701-1,000 (3) double

Table 4 Convection Ovens
701-1,000 Lunches n=60



Guidelines: < 400 (1) double
401-700 (2) double
701-1,000 (3) double

Table 5 Deck Ovens/Stack Ovens n = 399

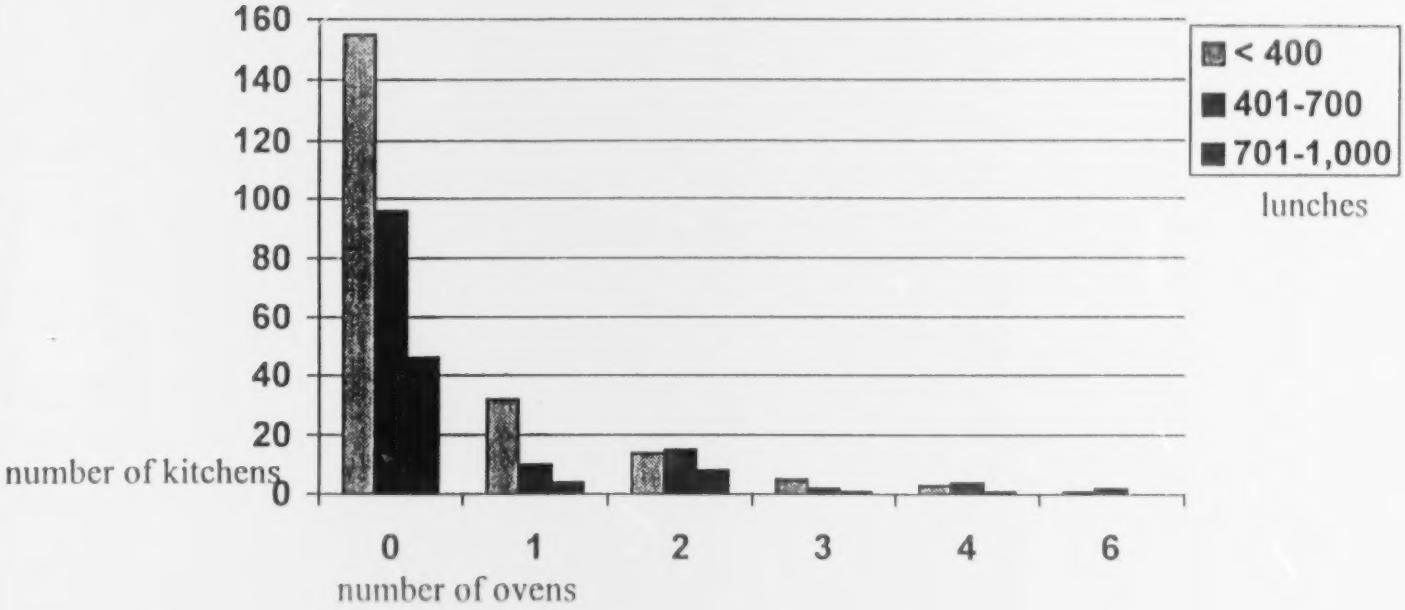


Table 6 Deck Ovens/Stack Ovens
< 400 Lunches n=55

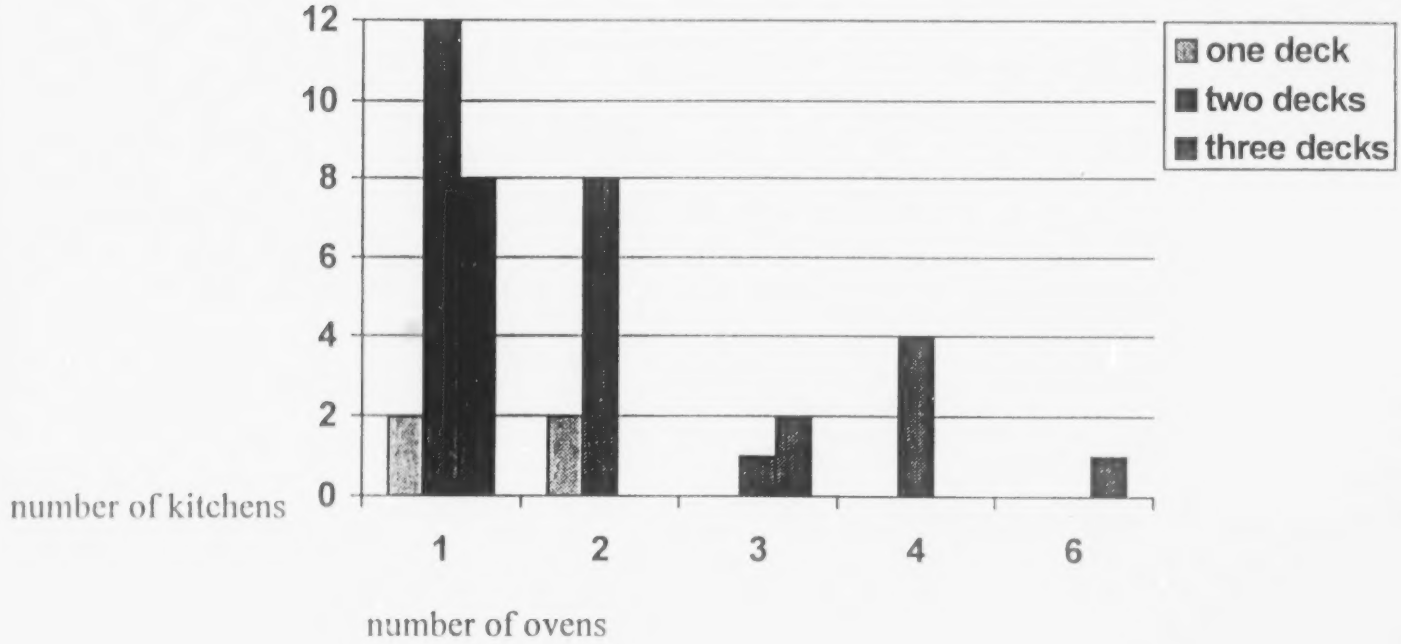


Table 7 Deck Ovens/Stack Ovens
401-700 Lunches n=33

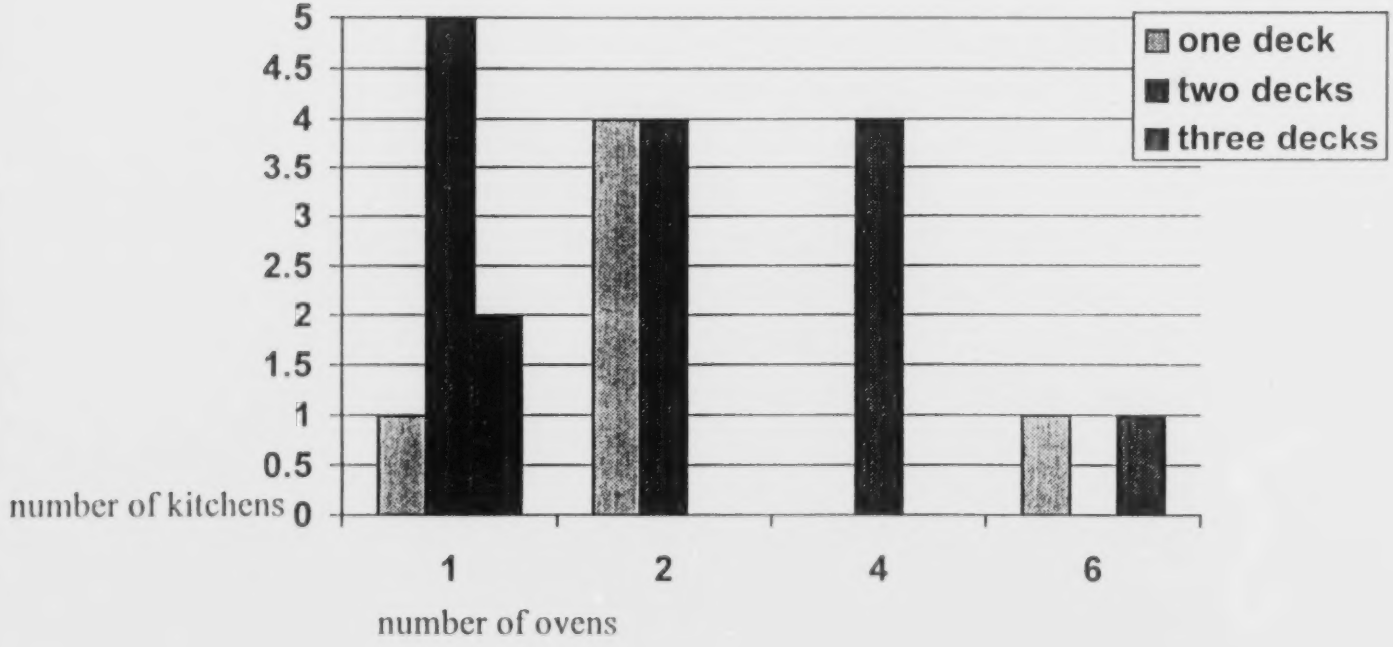


Table 8 Deck Ovens/Stack Ovens
701-1,000 Lunches n=14

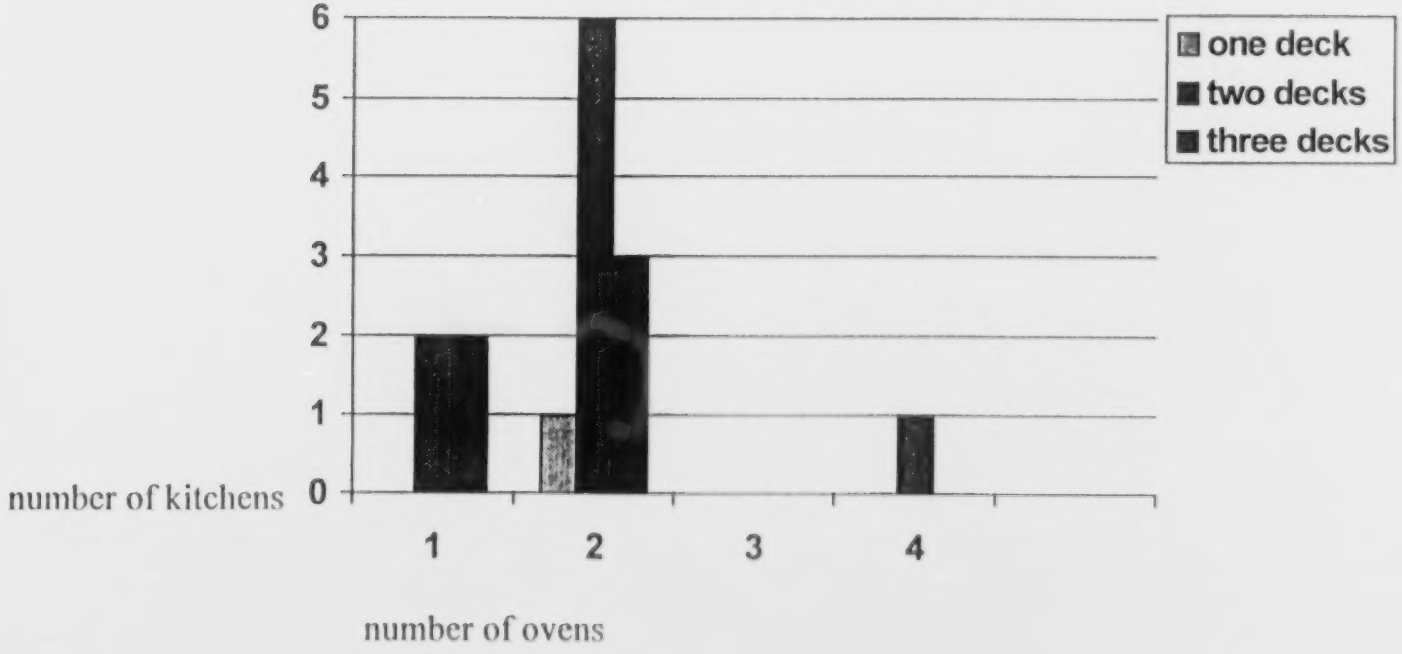


Table 9 Range Ovens n=399

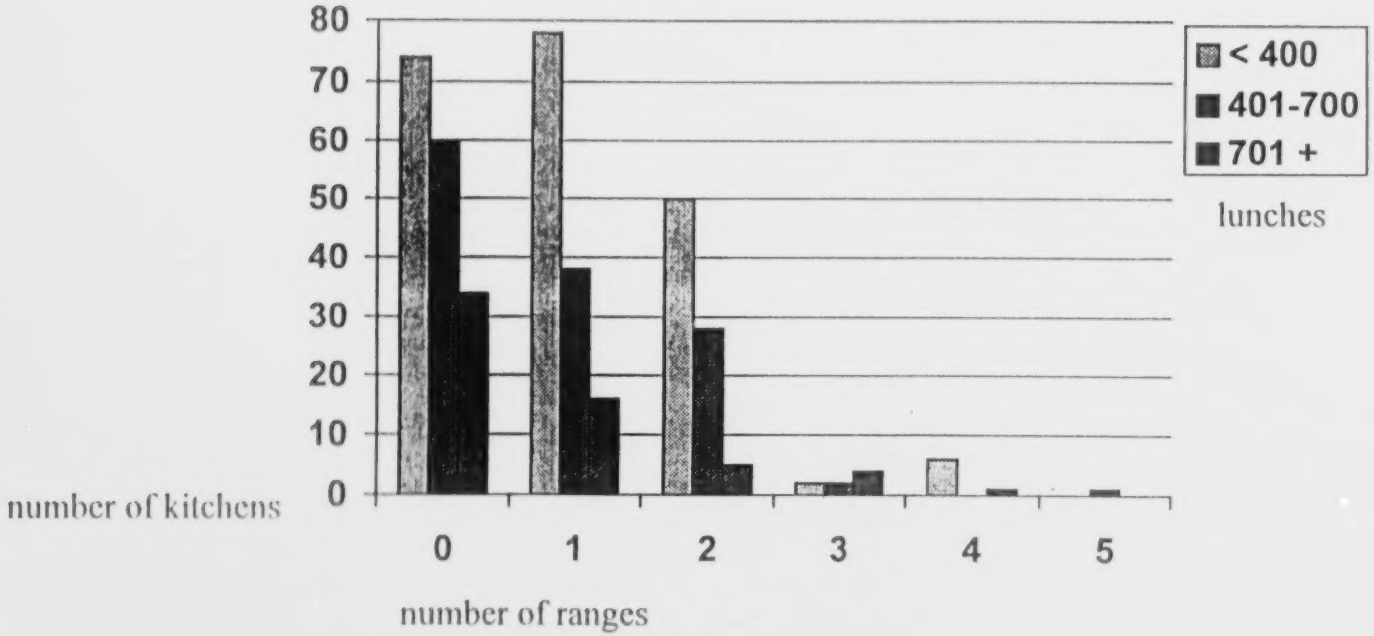


Table 10 Combination Convection Oven Steamers n= 399

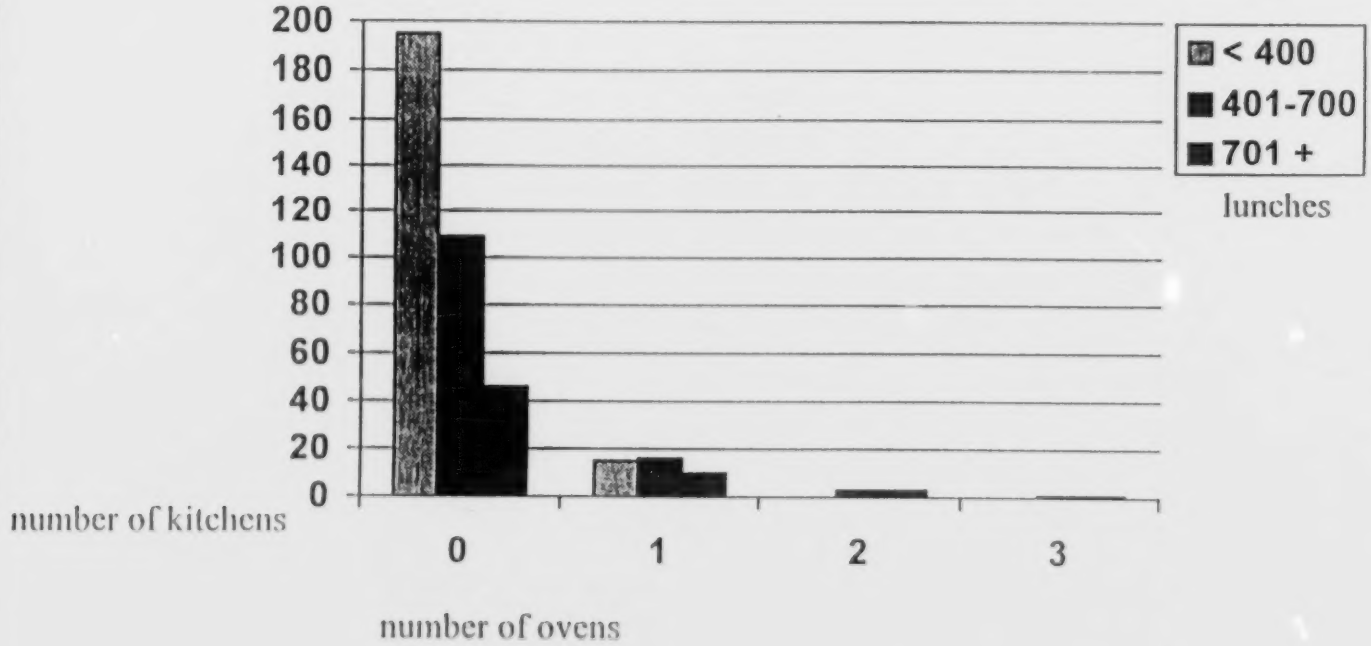


Table 11 Deep Fat Fryers n=399

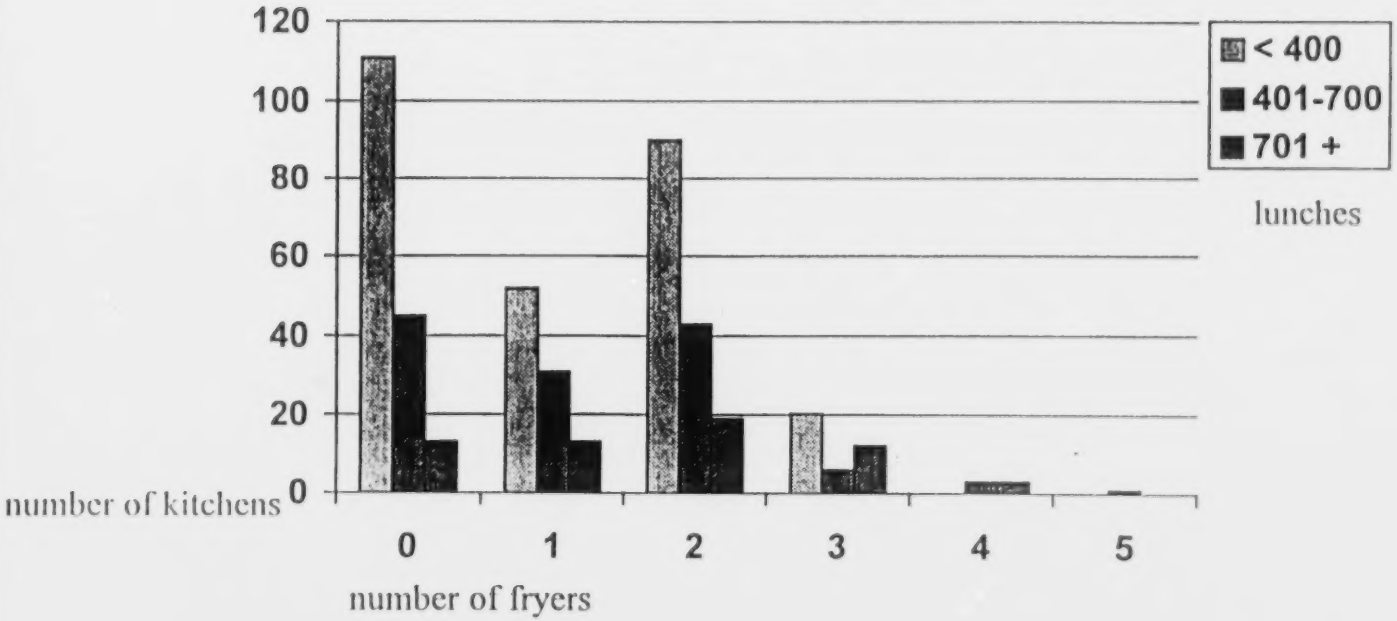
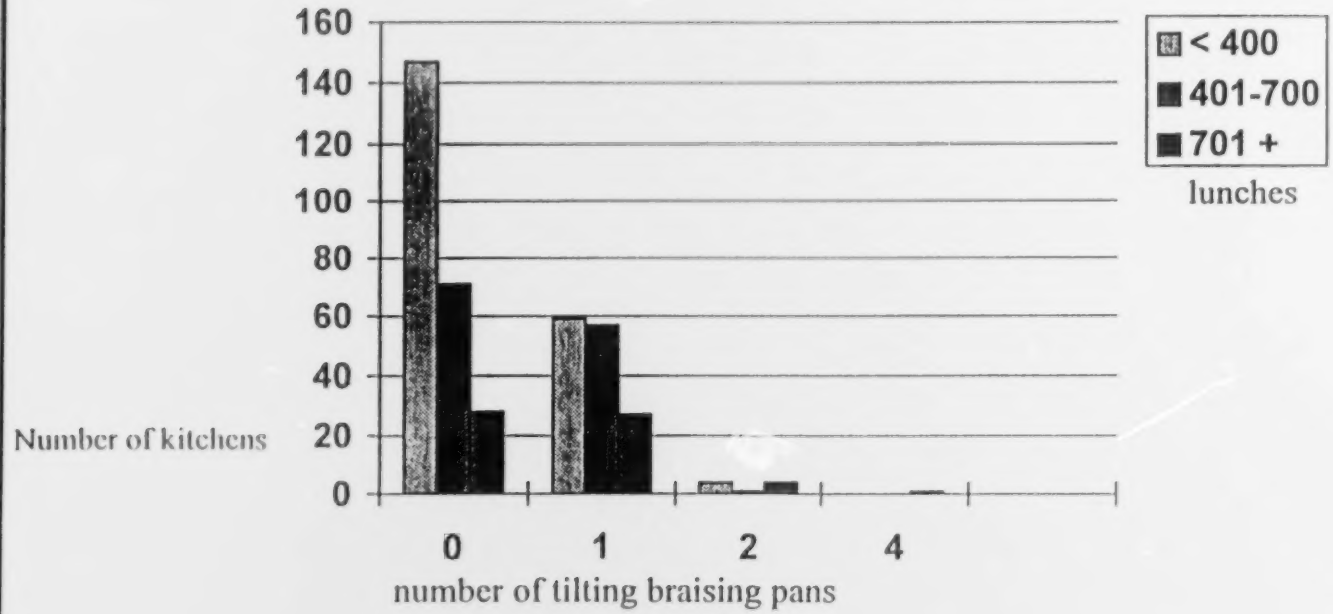


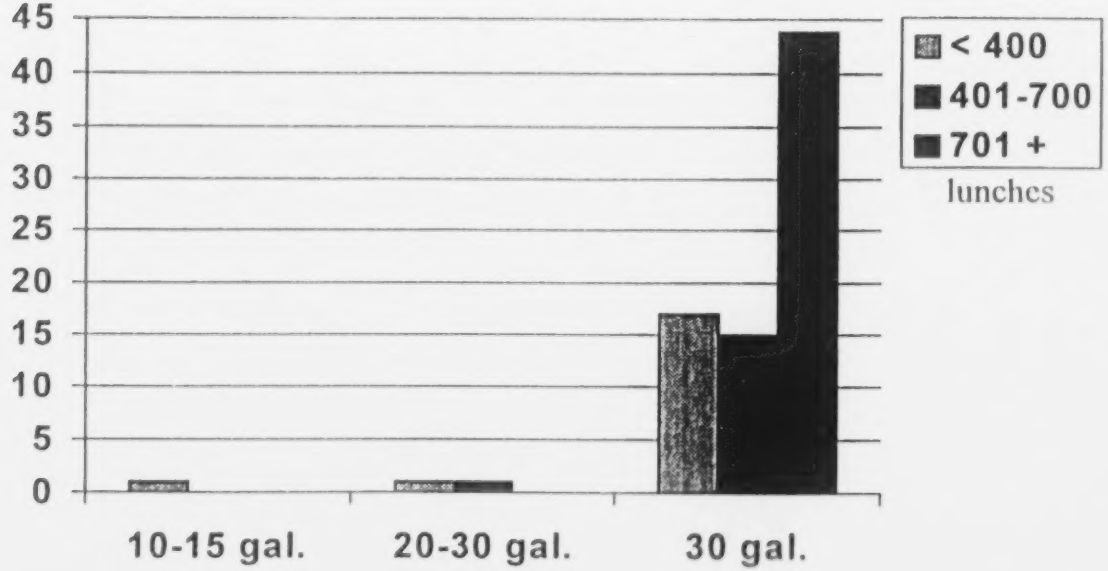
Table 12 Tilting Braising Pans n=399



Guidelines:

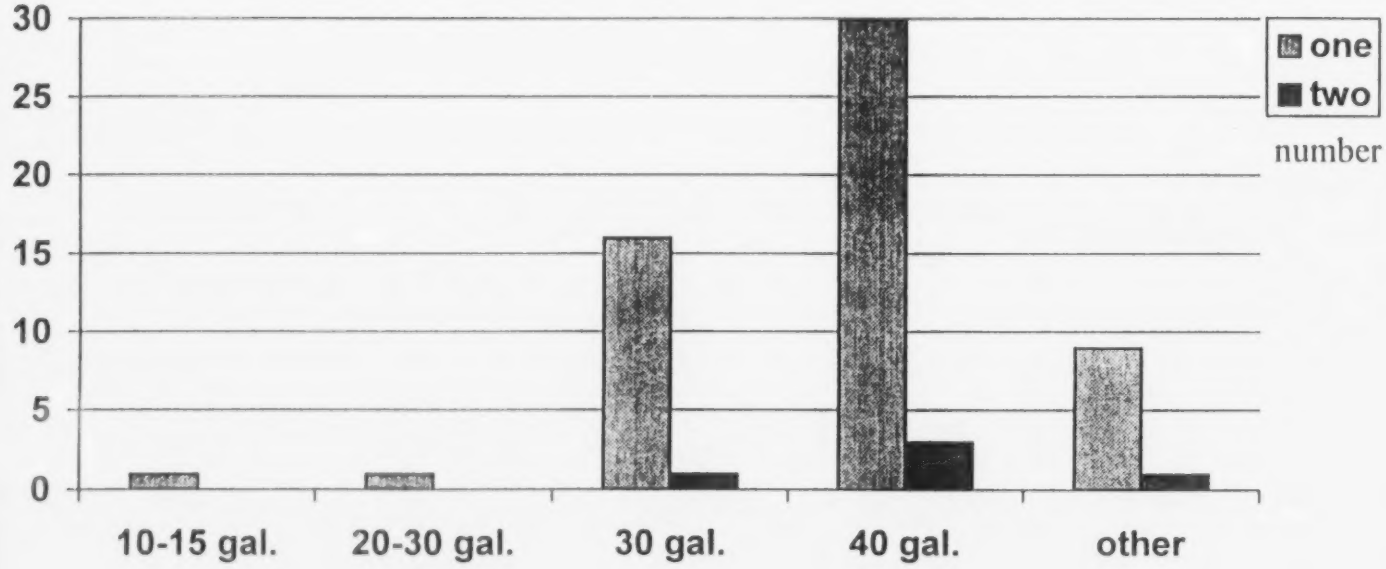
< 400	(1) 20 or 30 gal.
401-700	(1) 23 or 30 gal. and (1) 40 gal.
701-1,000	(2) 40 gal.

Table 13 Size of Tilting Braising Pans n=47



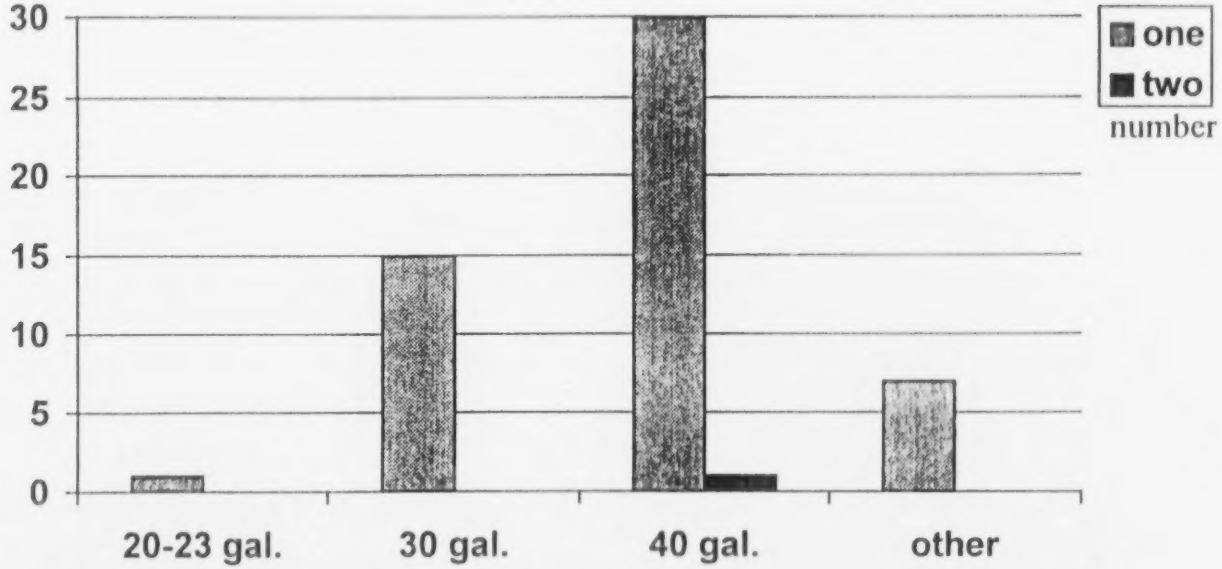
Guidelines:		
	< 400	(1) 20 or 30 gal.
	401-700	(1) 23 or 30 gal. and (1) 40 gal.
	701-1,000	(2) 40 gal.

Table 14 Tilting Braising Pans
< 400 Lunches n=63



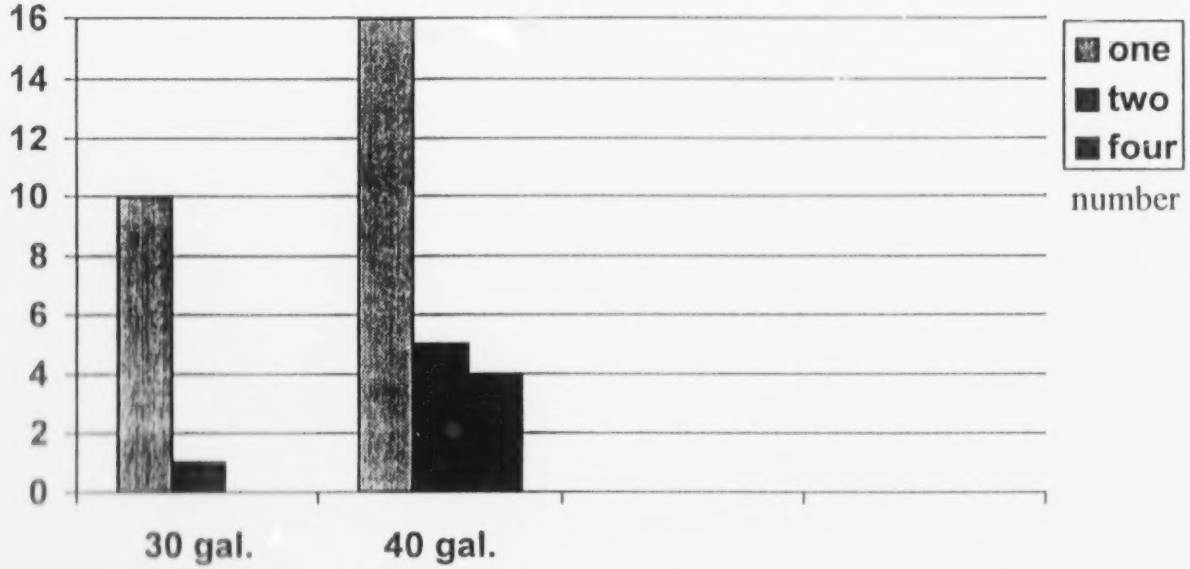
Guidelines:	**< 400**	**(1) 20 or 30 gal.**
	401-700	(1) 23 or 30 gal. and (1) 40 gal.
	701-1,000	(2) 40 gal.

Table 15 Tilting Braising Pans
401-700 Lunches n=58



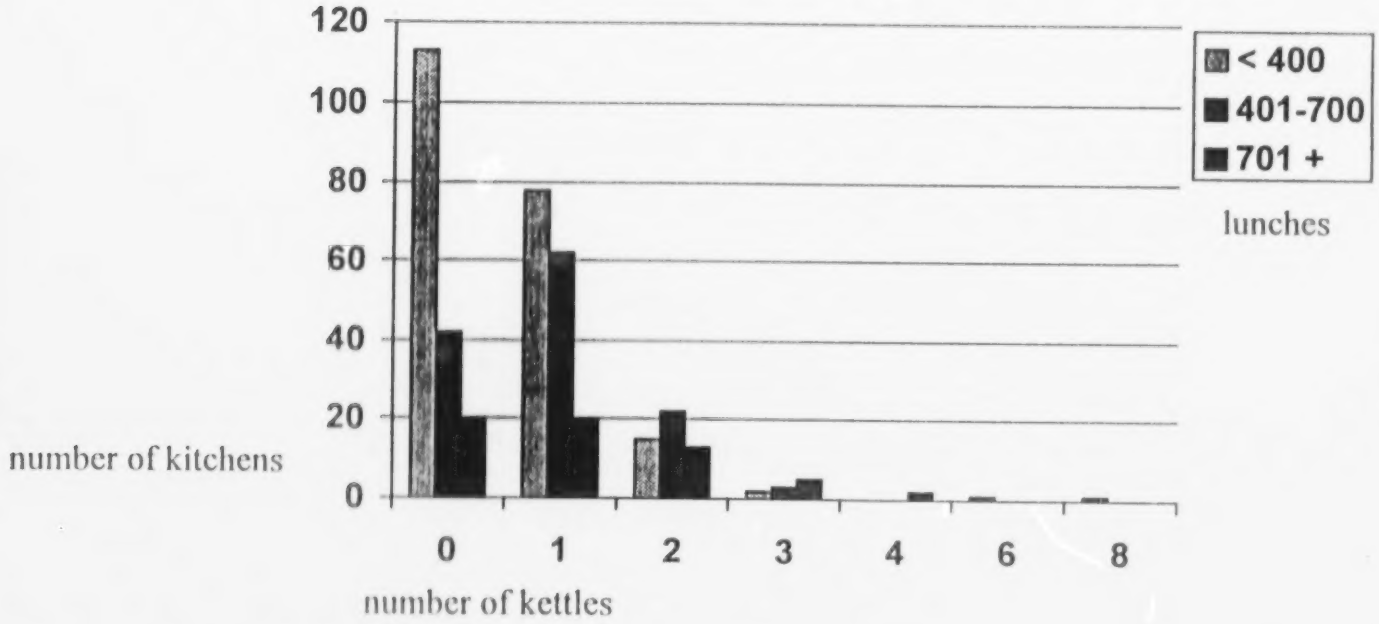
Guidelines:	< 400	(1) 20 or 30 gal.
	401-700	**(1) 23 or 30 gal and (1) 40 gal.**
	701-1,000	(2) 40 gal

Table16 Tilting Braising Pans
700-1,000 Lunches n=32



Guidelines:	< 400	(1) 20 or 30 gal.
	401-700	(1) 23 or 30 gal and (1) 40 gal.
	701-1,000	**(2) 40 gal**

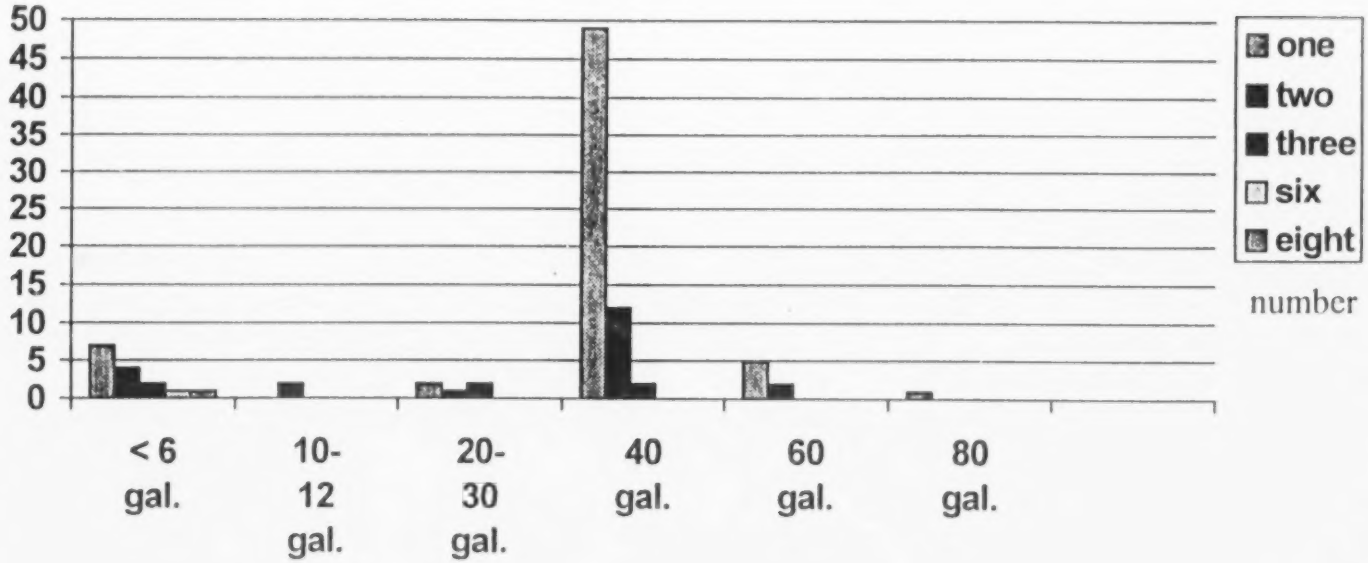
Table 17 Steam Jacketed Kettles n=399



Guidelines

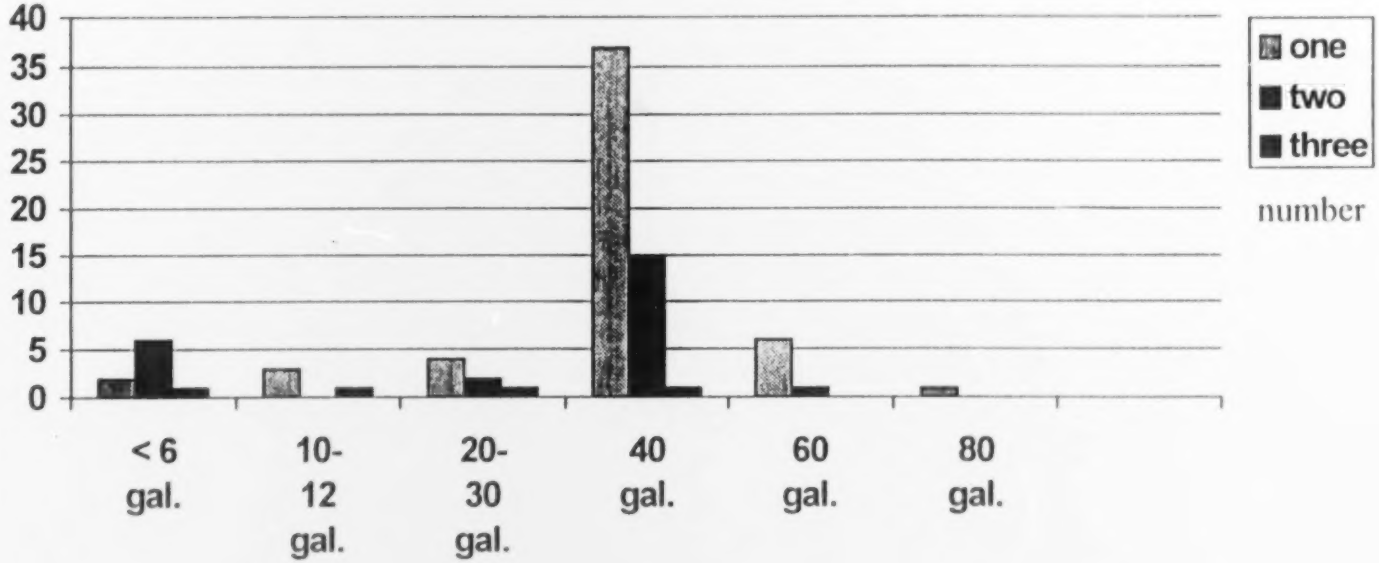
< 400	(1) 10 gal.
401-700	(1) 10 gal.
701-1,000	(1) 10 gal and (1) 20 gal.

Table 18 Steam Jacketed Kettles
< 400 Lunches n=97



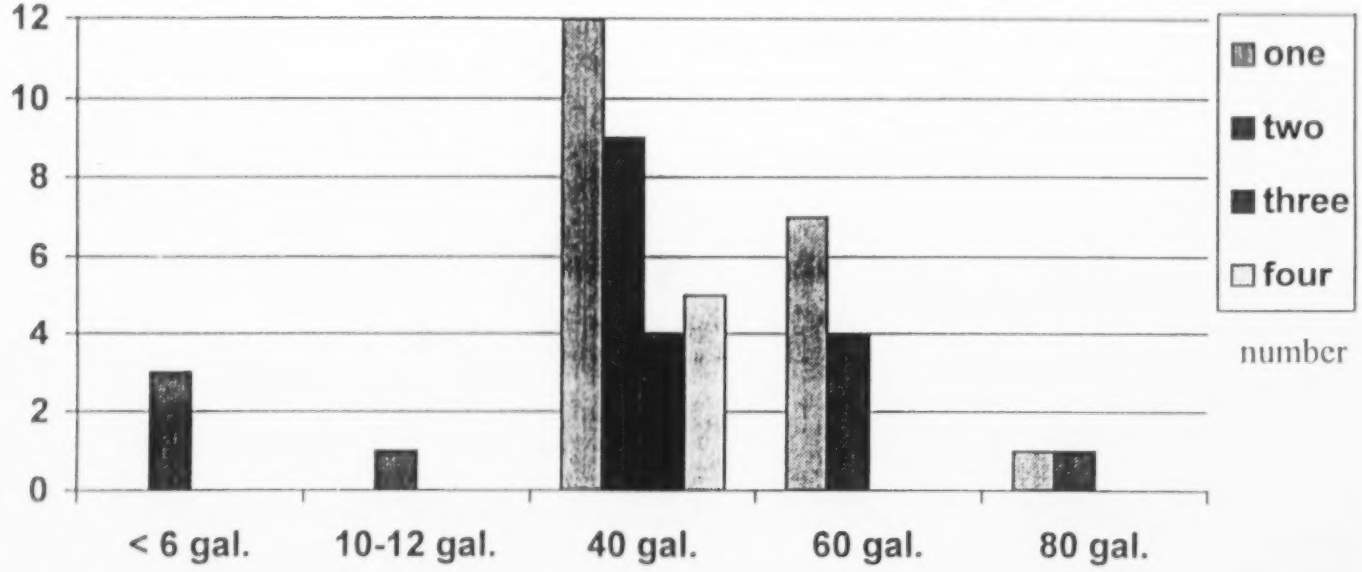
Guidelines	**< 400**	**(1) 10 gal.**
	401-700	(1) 10 gal.
	701-1,000	(1) 10 gal and (1) 20 gal

Table 19 Steam Jacketed Kettles
401-700 Lunches n=87



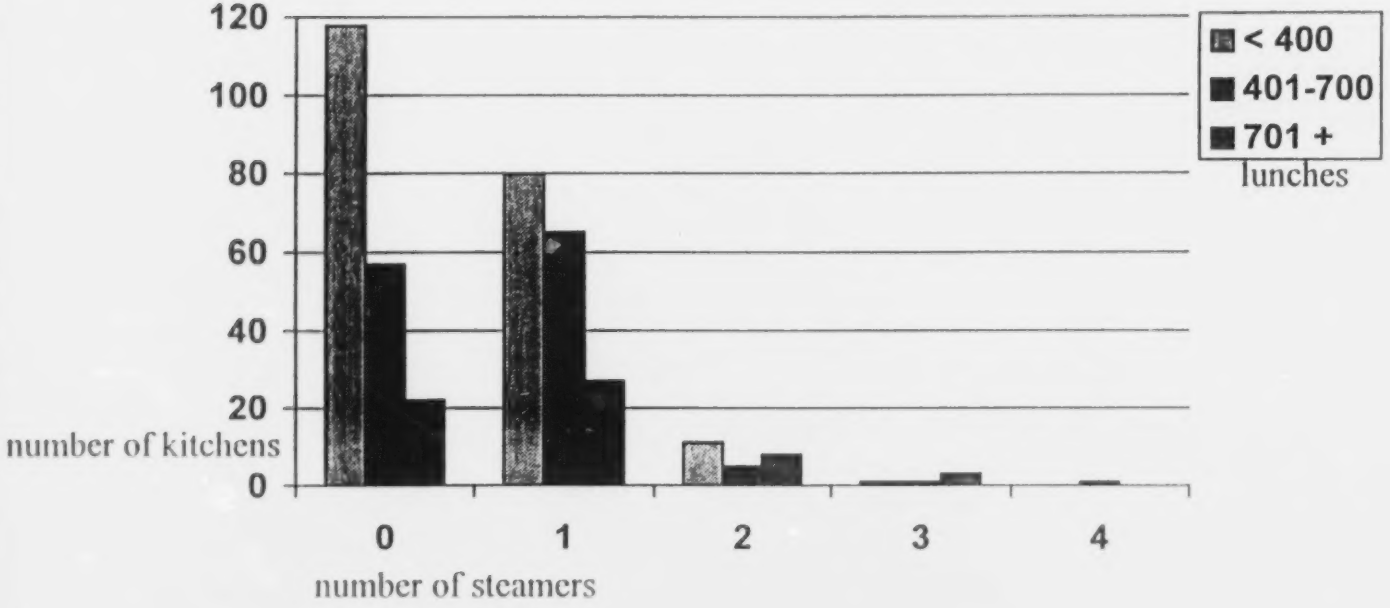
Guidelines < 400 (1) 10 gal.
401-700 (1) 10 gal.
701-1,000 (1) 10 gal and (1) 20 gal

Table 20 Steam Jacketed Kettles
701-1,000 Lunches n=50



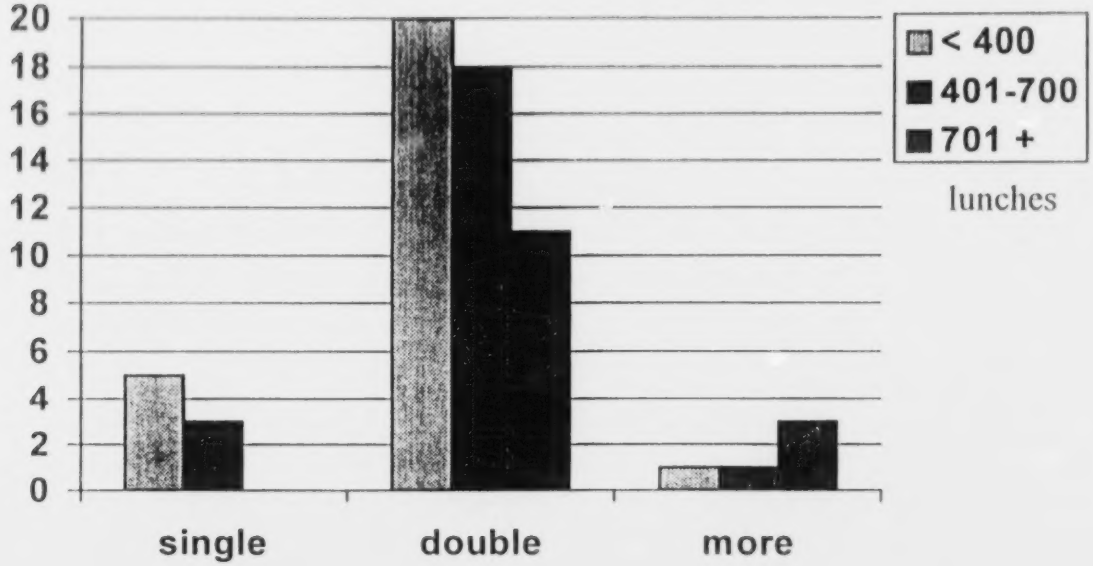
Guidelines	< 400	(1) 10 gal.
	401-700	(1) 10 gal.
	701-1,000	**(1) 10 gal and (1) 20 gal**

Table 21 All Types of Steamers n=399



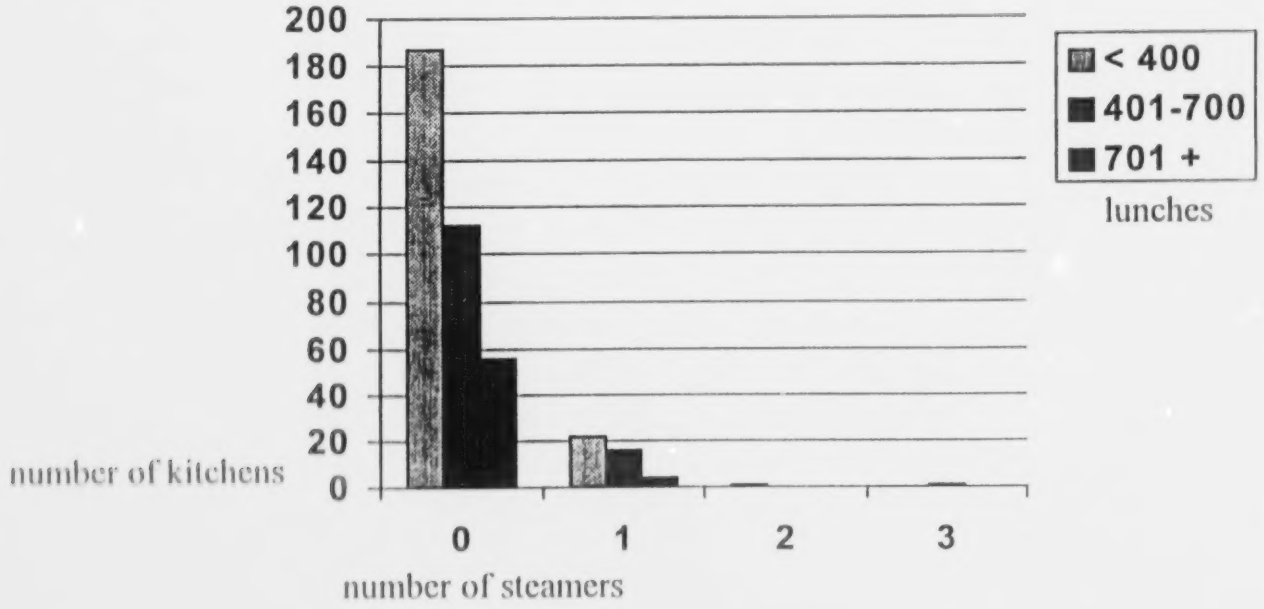
Guidelines		
	< 400	(1) 2 compartment
	401-700	(1) 2 compartment
	701-1,000	(2) 2 compartment

Table 22 Pressureless Convection Steamers n=62



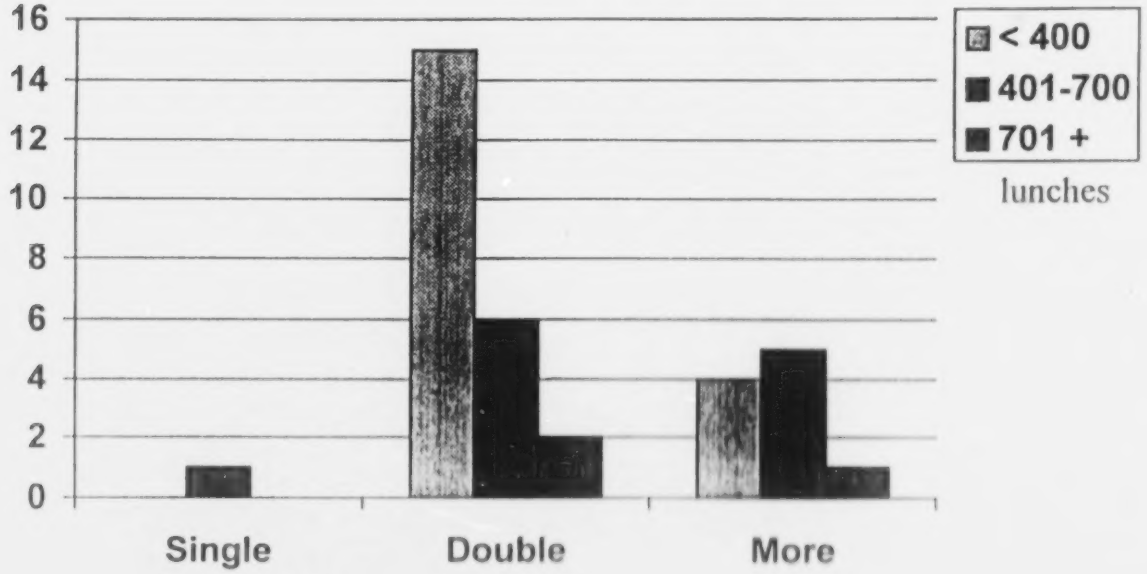
Guidelines	<400	(1) 2 compartment
	401-700	(1) 2 compartment
	701-1,000	(2) 2 compartment

Table 23 Low Pressure (5psi) Steamers n=45



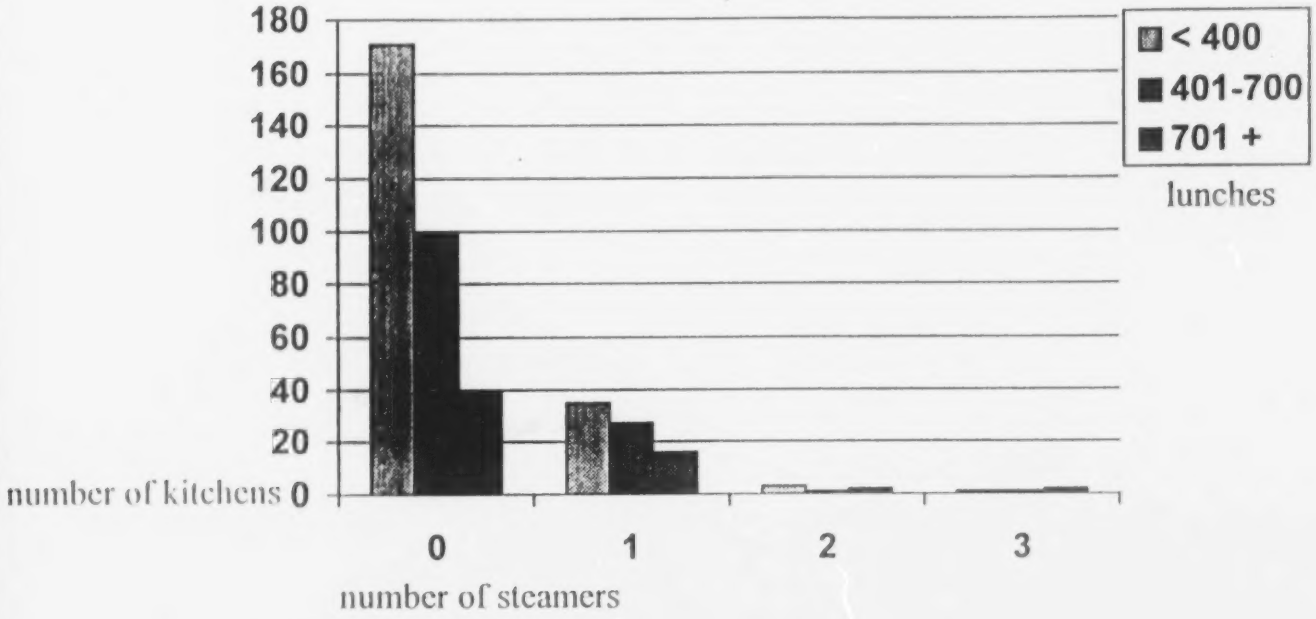
Guidelines		
	<400	(1) 2 compartment
	401-700	(1) 2 compartment
	701-1,000	(2) 2 compartment

Table 24 Low Pressure (5psi) Steamers n=34



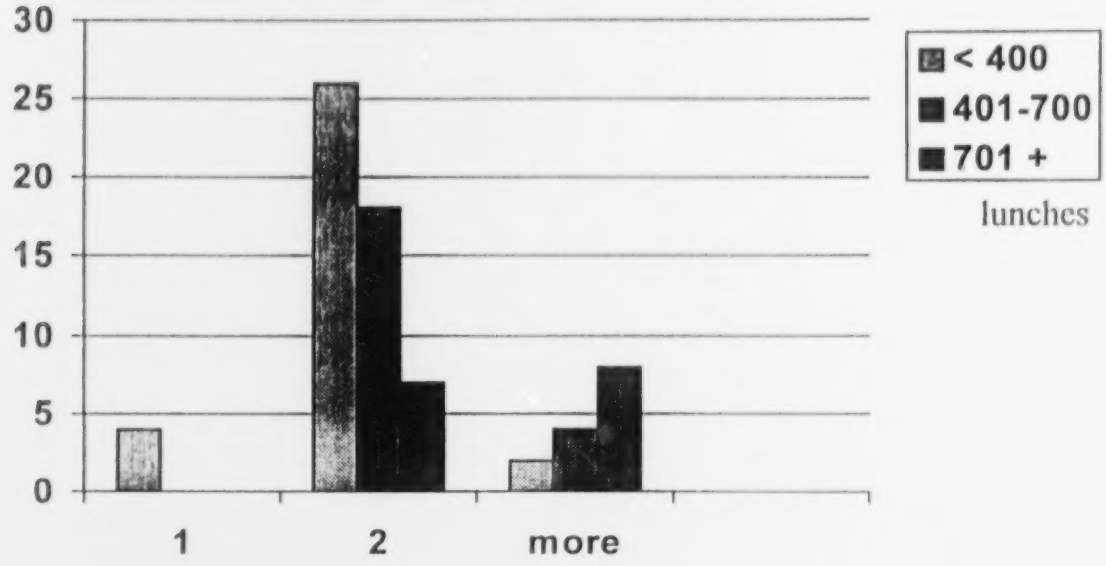
Guidelines		
	<400	(1) 2 compartment
	401-700	(1) 2 compartment
	701-1,000	(2) 2 compartment

Table 25 High Pressure (15psi) Steamers n=88



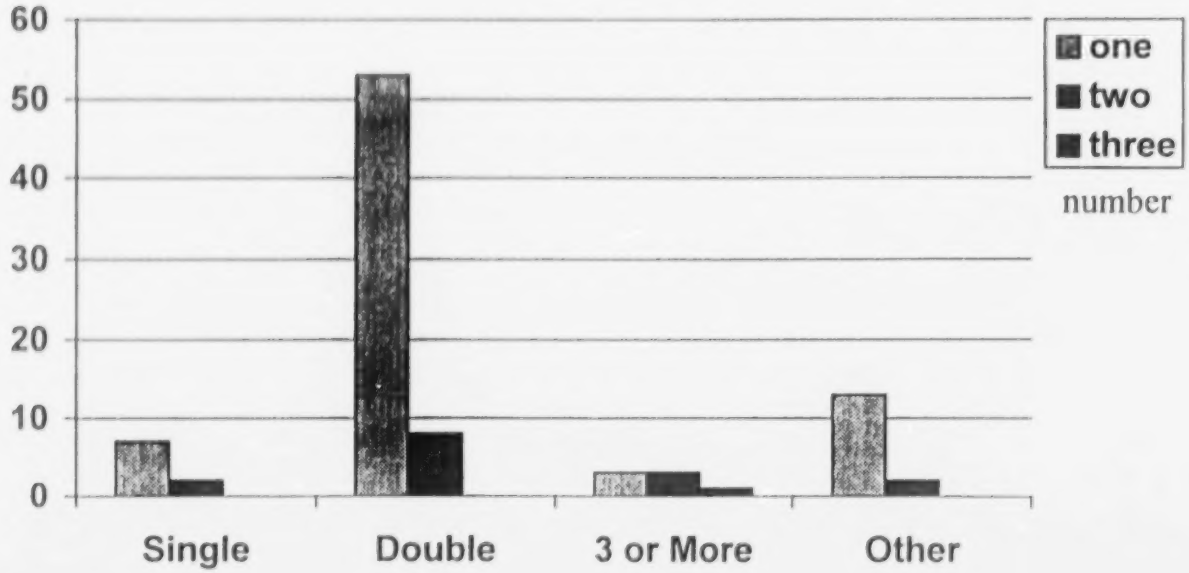
Guidelines		
	< 400	(1) 2 compartment
	401-700	(1) 2 compartment
	701-1,000	(2) 2 compartment

Table 26 Number of Compartments
High Pressure (15pis) Steamers n=69



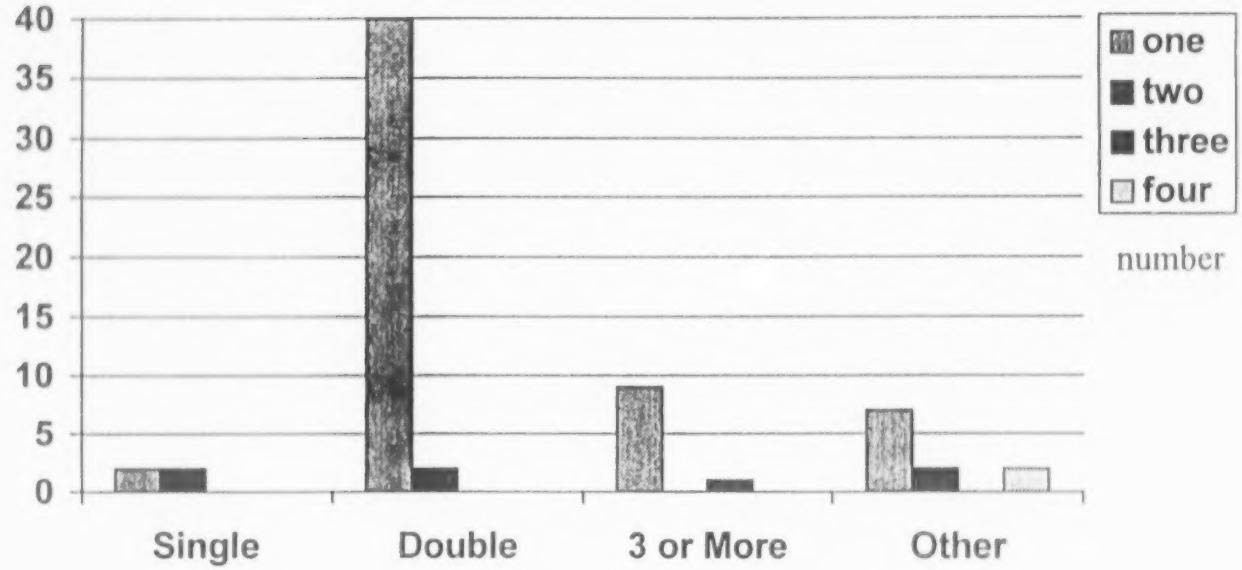
Guidelines	< 400	(1) 2 compartment
	401-700	(1) 2 compartment
	701-1,000	(2) 2 compartment

Table 27 All Types of Steamers
< 400 Lunches n=72



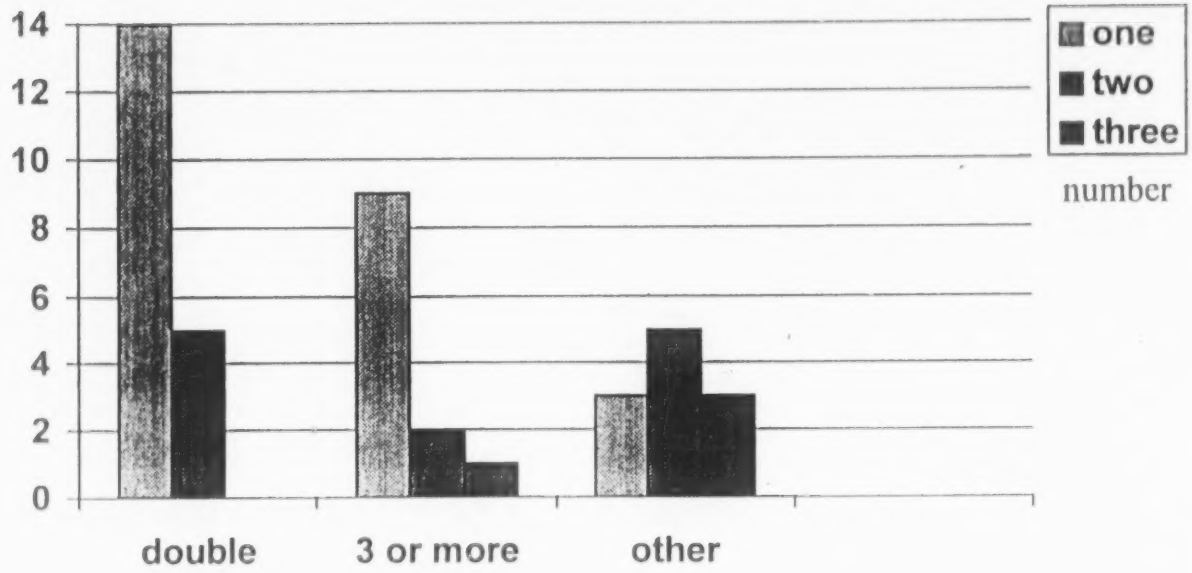
Guidelines	**< 400**	**(1) 2 compartment**
	401-700	(1) 2 compartment
	701-1,000	(2) 2 compartment

Table 28 All Types of Steamers
401-700 Lunches n=72



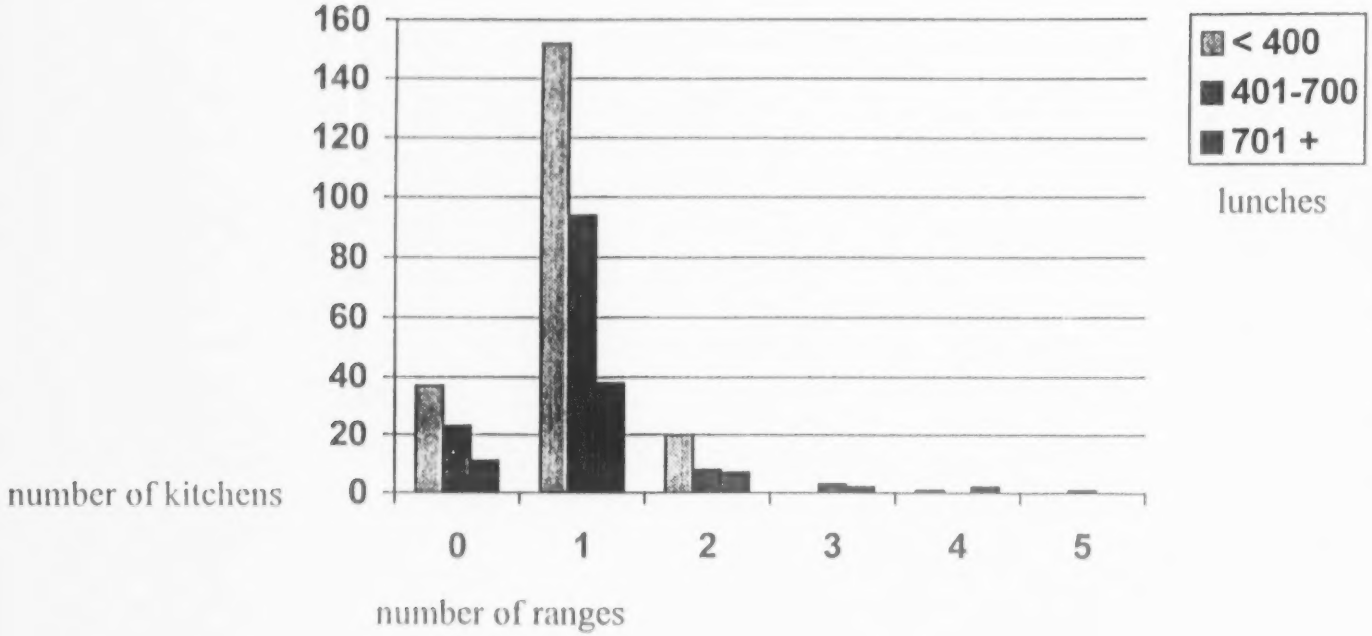
Guidelines	< 400	(1) 2 compartment
	401-700	**(1) 2 compartment**
	701-1,000	(2) 2 compartment

Table 29 All Types of Steamers
701-1,000 Lunches n=38



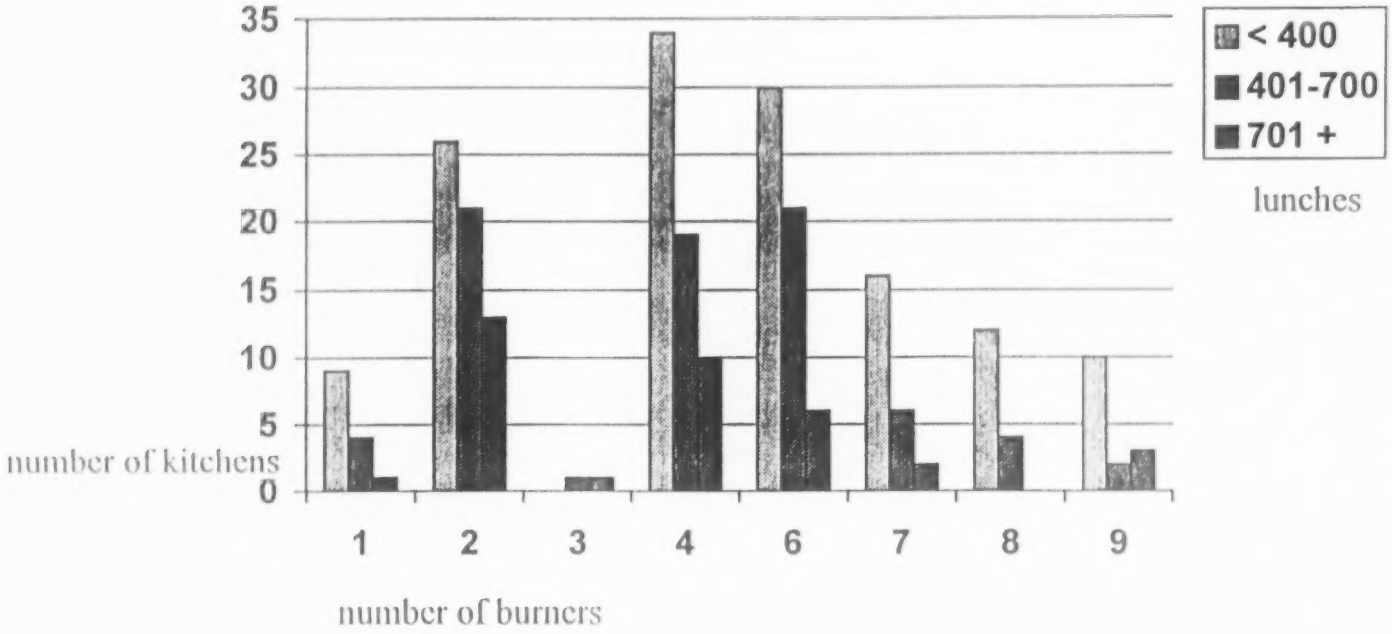
Guidelines	< 400	(1) 2 compartment
	401-700	(1) 2 compartment
	701-1,000	**(2) 2 compartment**

Table 30 Ranges n=399



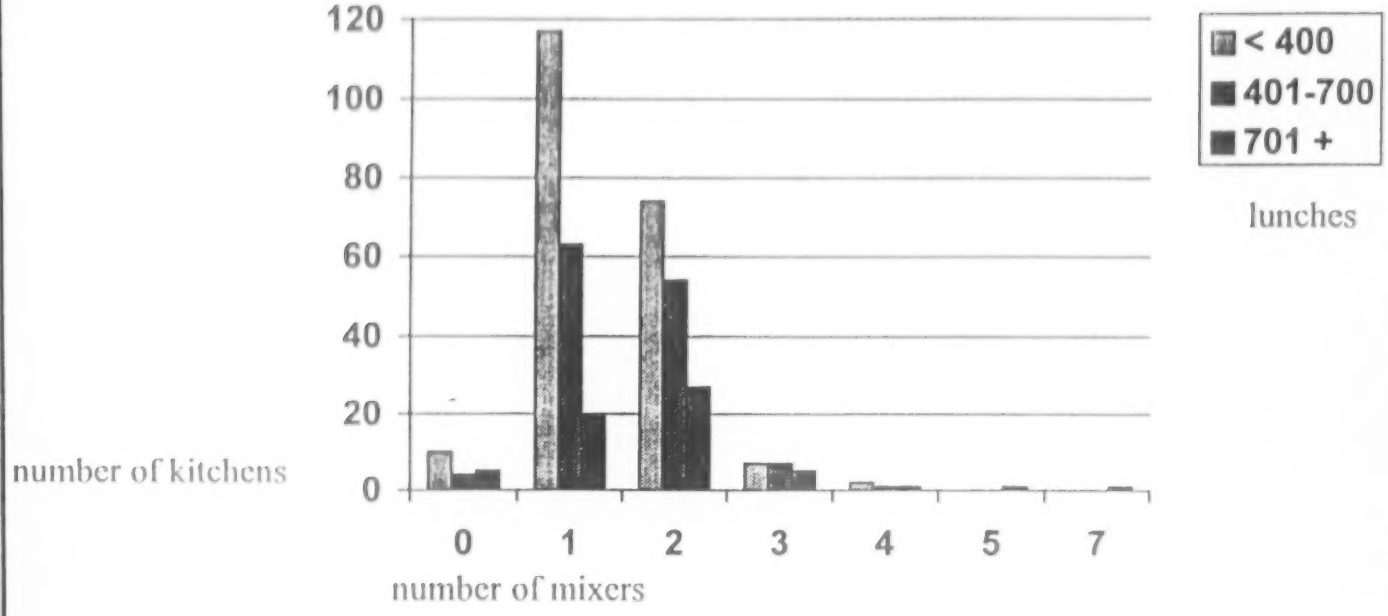
Guidelines		
	< 400	(1) 2 burner
	401-700	(1) 2 burner
	701-1,000	(1) 2 burner

Table 31 Number of Range Burners n= 251



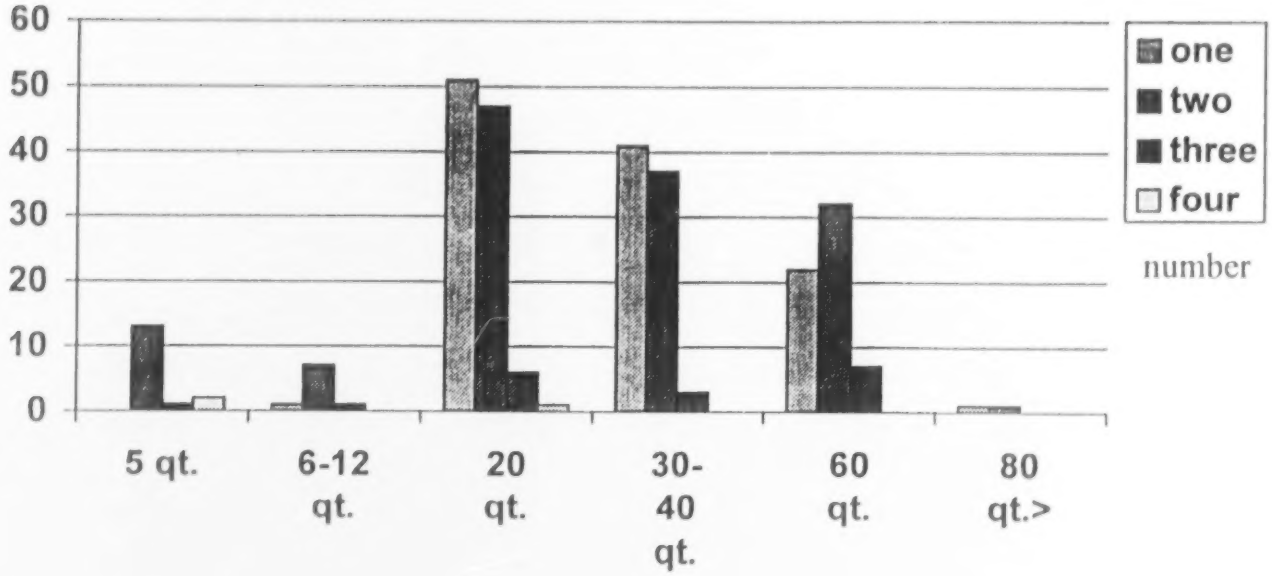
Guidelines		
	< 400	(1) 2 burner
	401-700	(1) 2 burner
	701-1,000	(1) 2 burner

Table 32 Mixers n=399



Guidelines		
	< 400	(1) 60 qt.with 30 qt. attachments
	401-700	(1) 60 qt. with 30 qt. attachments
	701-1,000	(1) 30 qt. and (1) 60 qt.

Table 33 Mixers
< 400 Lunches n=202



Guidelines	**< 400**	**(1) 60 qt.with 30 qt. attachments**
	401-700	(1) 60 qt. with 30 qt. attachments
	701-1,000	(1) 30 qt. and (1) 60 qt.

Table 34 Mixers
401-700 Lunches n=129

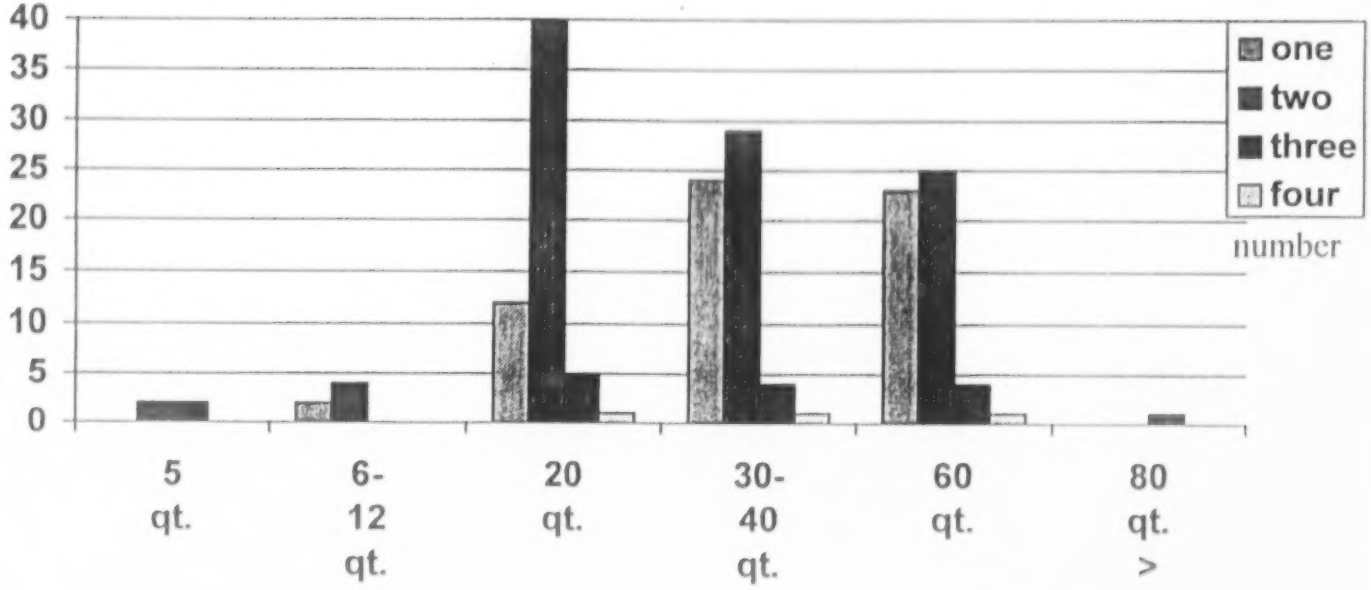
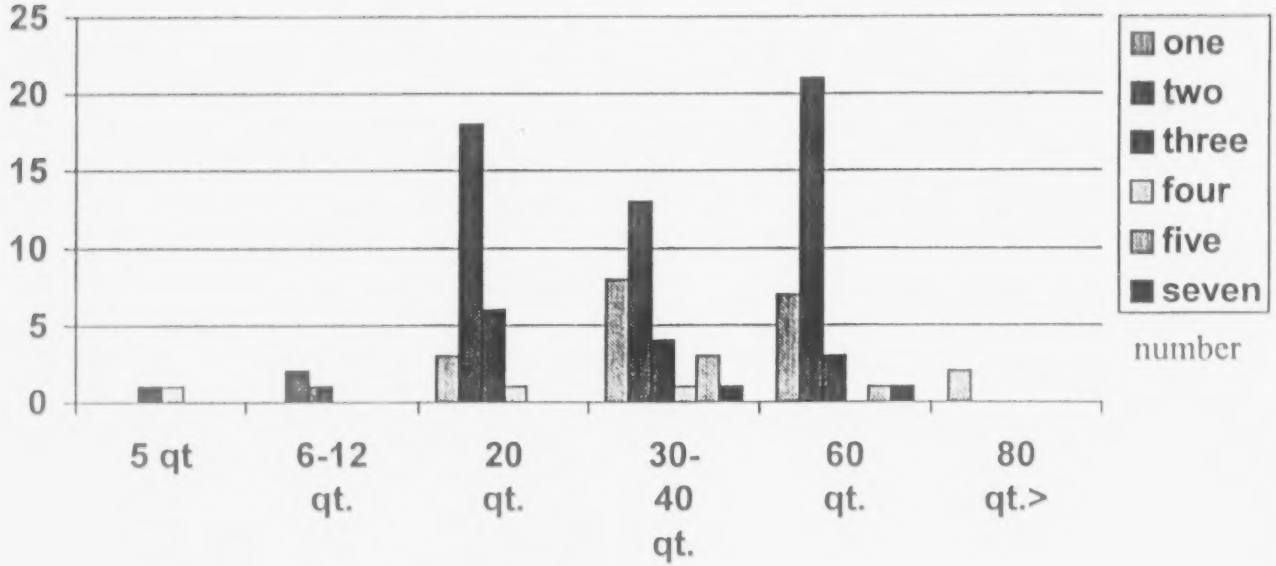
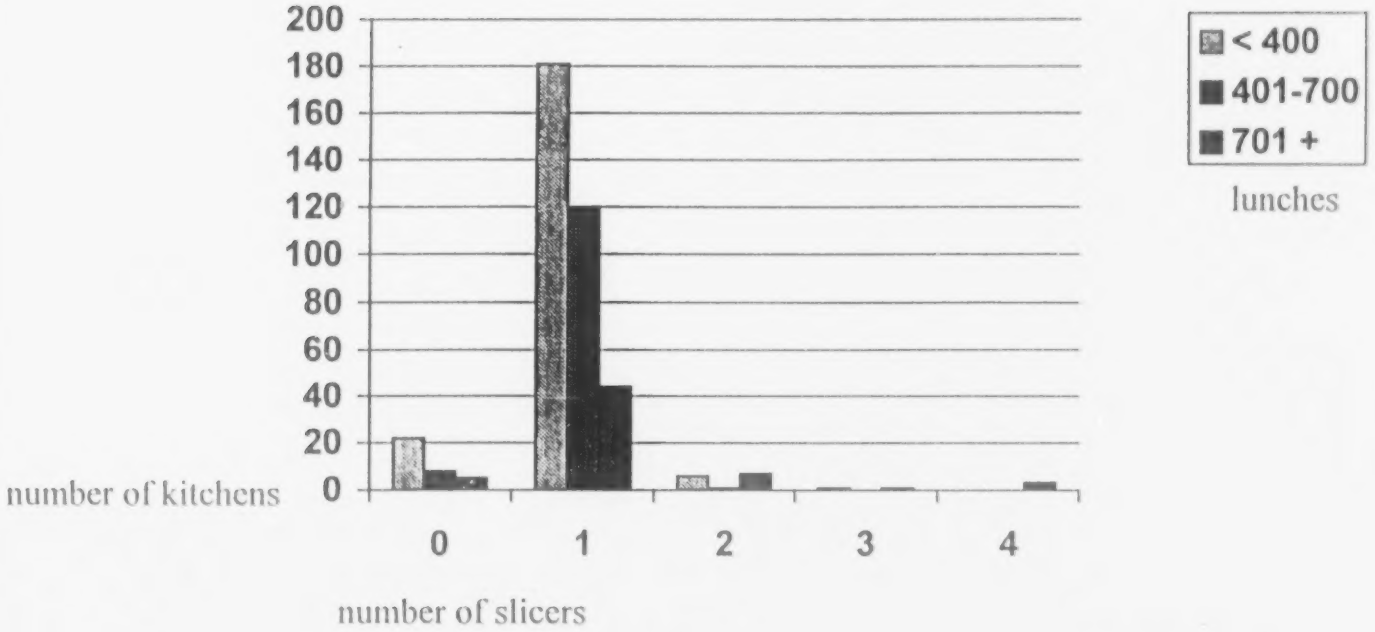


Table 35 Mixers
701-1,000 Lunches n=55



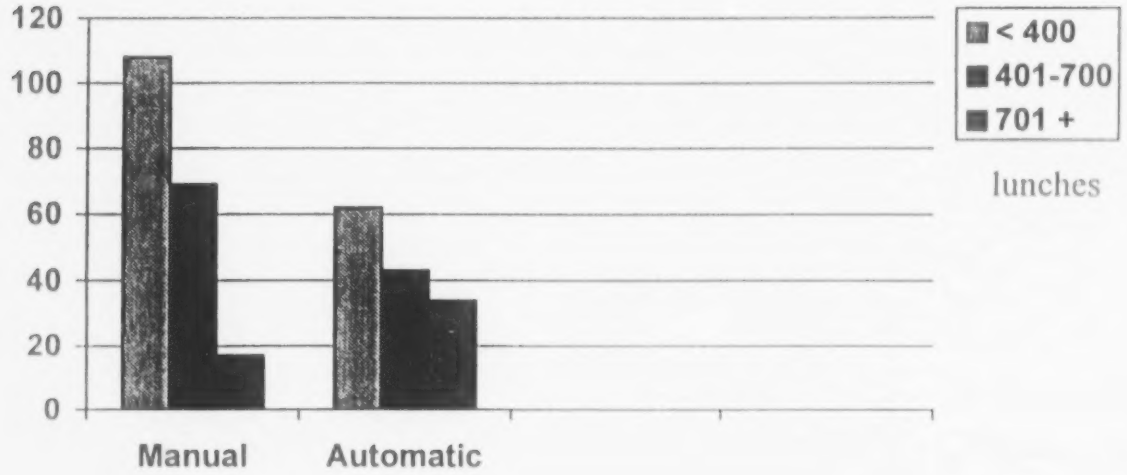
Guidelines	< 400	(1) 60 qt.with 30 qt. attachments
	401-700	(1) 60 qt. with 30 qt. attachments
	701-1,000	**(1) 30 qt. and (1) 60 qt.**

Table 36 Slicers n=210



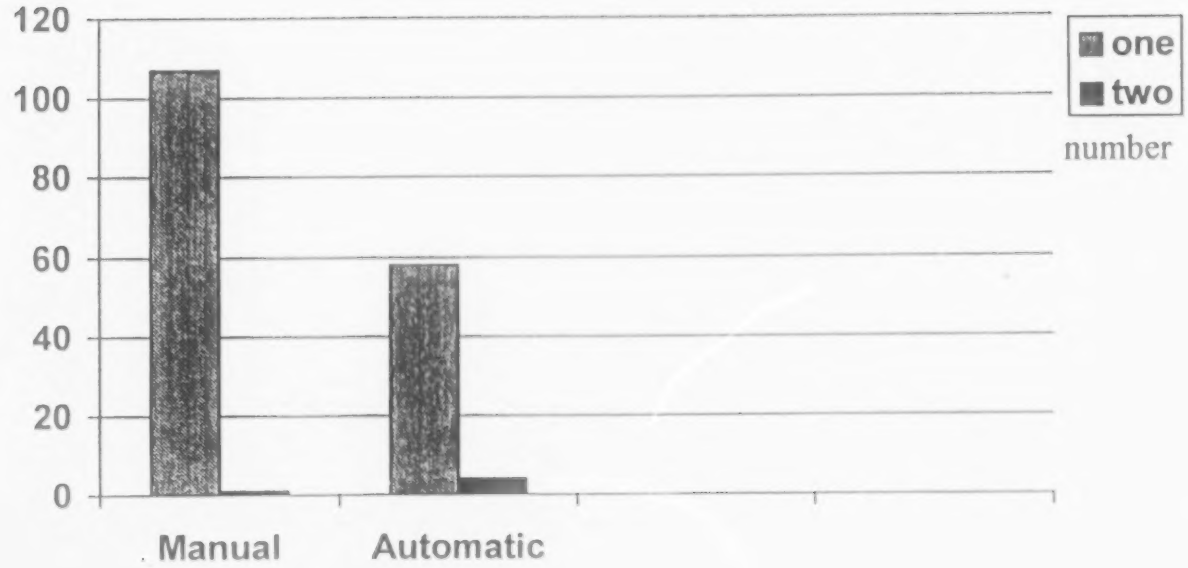
Guidelines		
	< 400	(1) automatic
	401-700	(1) automatic
	701-1,000	(2) automatic

Table 37 Style of Slicers n=233



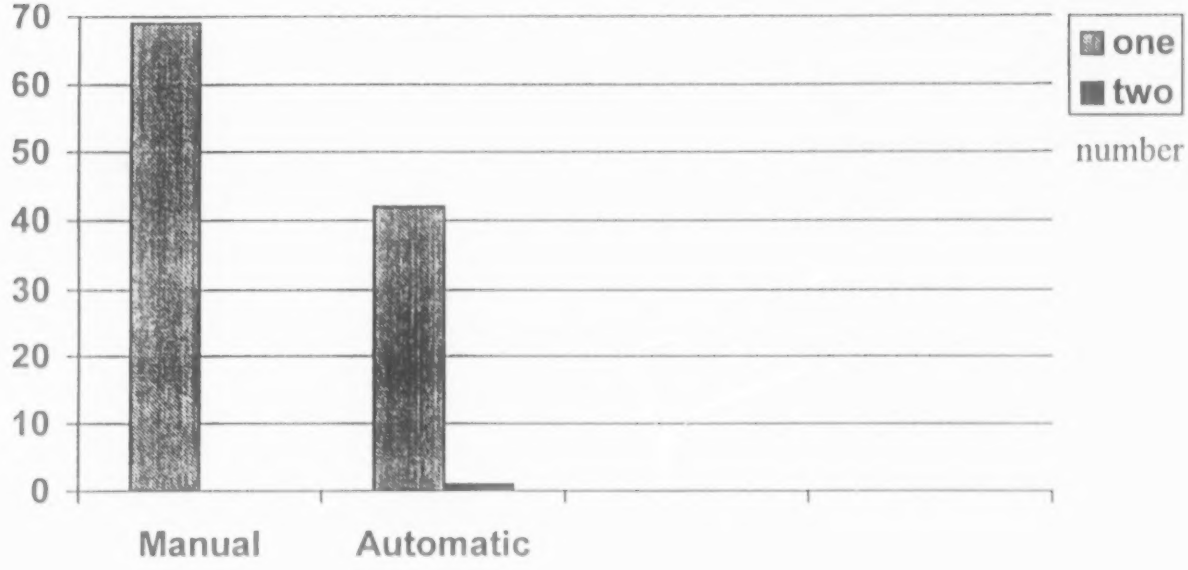
Guidelines	< 400	(1) automatic
	401-700	(1) automatic
	701-1,000	(2) automatic

Table 38 Slicers
< 400 Lunches n=188



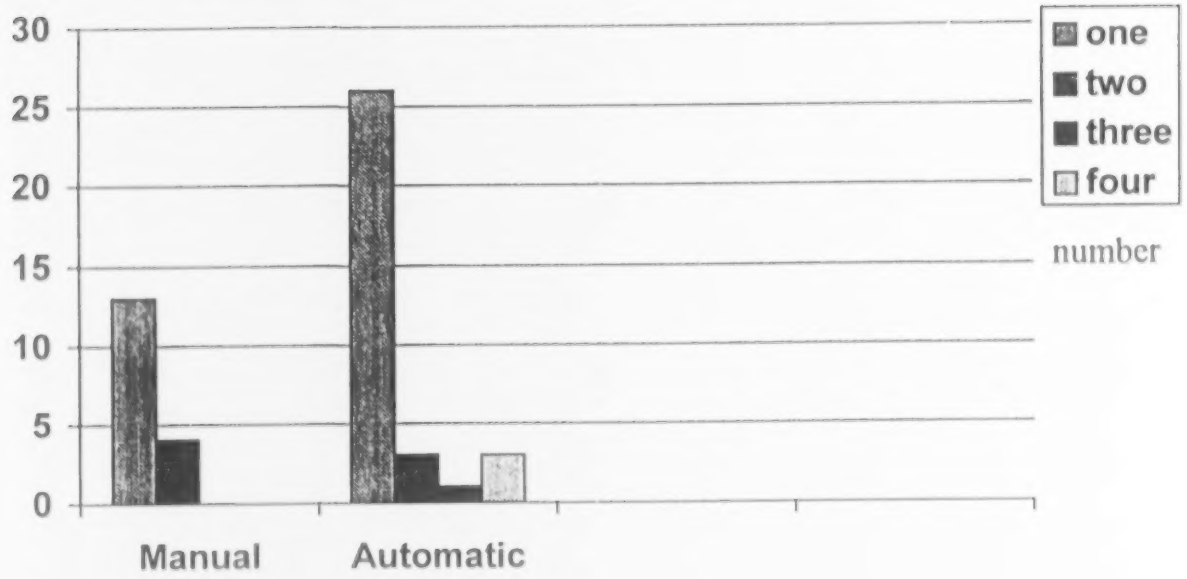
Guidelines	**<400**	**(1) automatic**
	401-700	(1) automatic
	701-1,000	(2) automatic

Table 39 Slicers
401-700 Lunches n=101



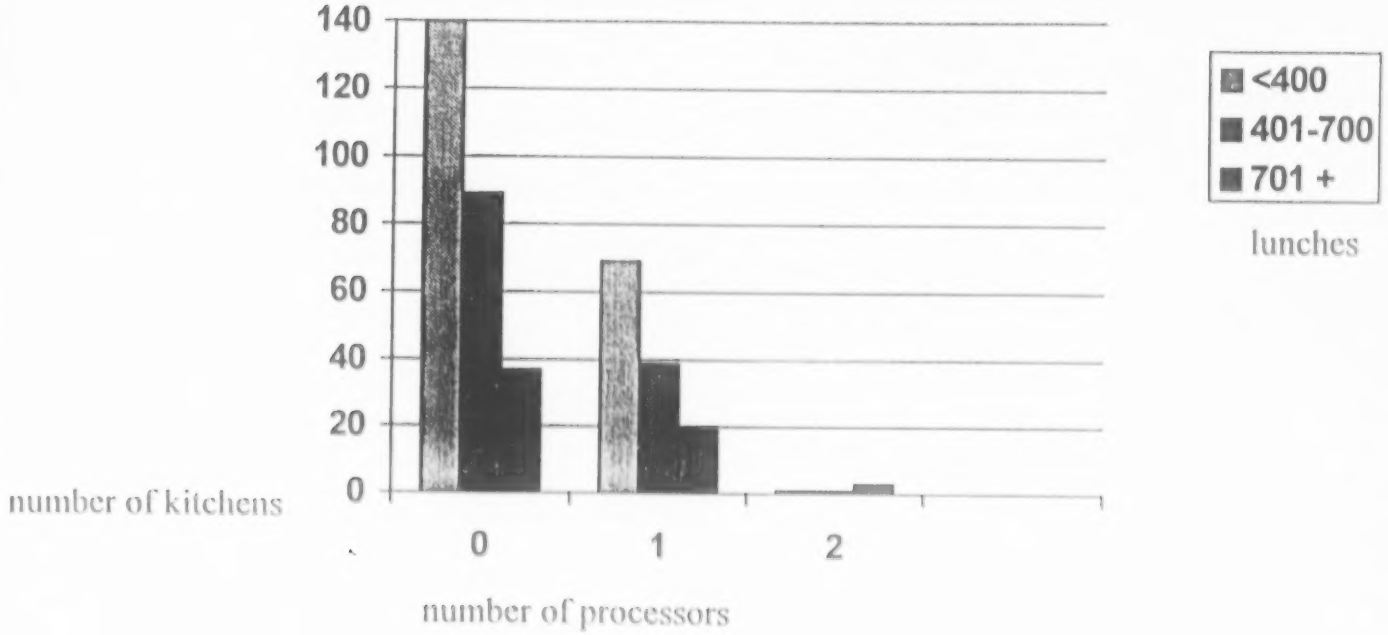
Guidelines	< 400	(1) automatic
	401-700	**(1) automatic**
	701-1,000	(2) automatic

Table 40 Slicers
701-1,000 Lunches n=50



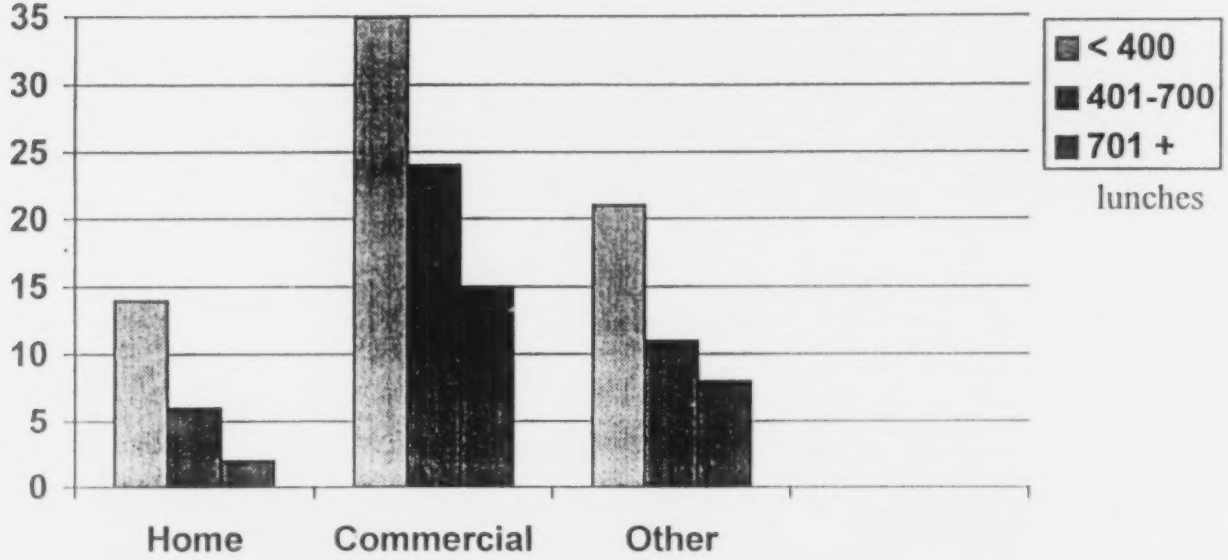
Guidelines	< 400	(1) automatic
	401-700	(1) automatic
	701-1,000	**(2) automatic**

Table 41 Food Processors n=399



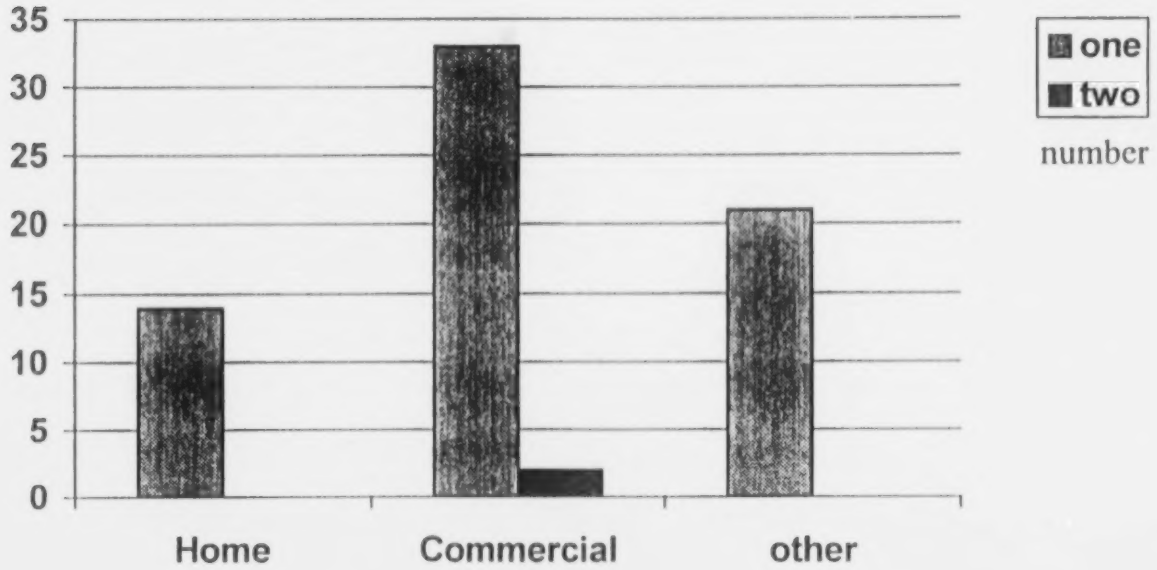
Guidelines		
	< 400	(1) table top
	401-700	(1) table top
	701-1,000	(1) table top

Table 42 Style of Food Processor n=137



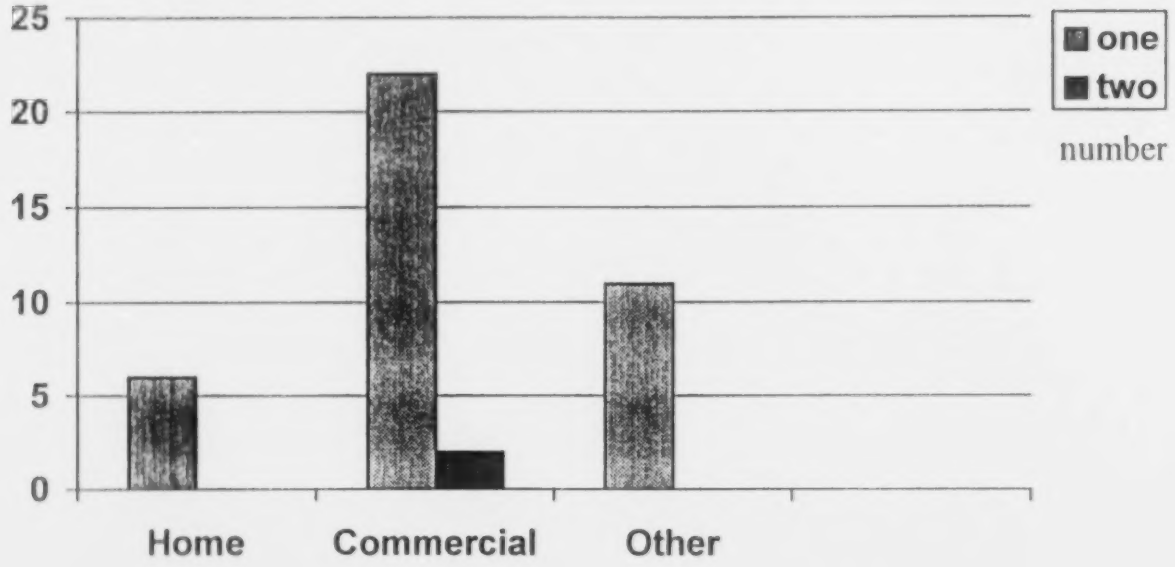
Guidelines		
	< 400	(1) table top
	401-700	(1) table top
	701-1,000	(1) table top

Table 43 Food Processors
< 400 Lunches n=70



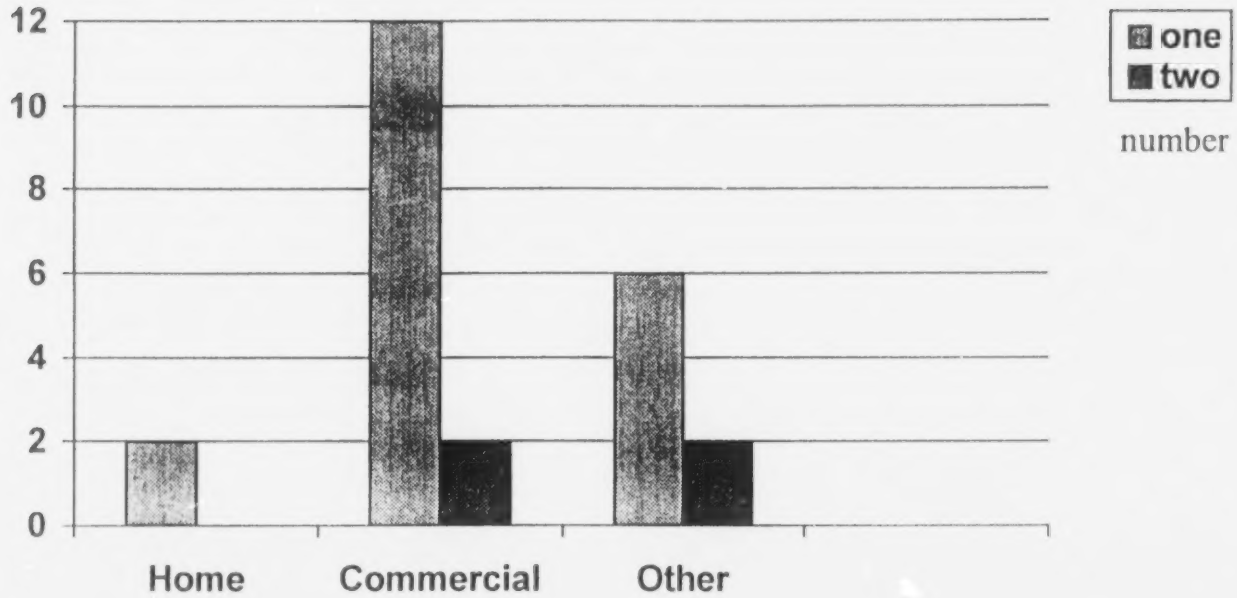
Guidelines	**< 400**	**(1) table top**
	401-700	(1) table top
	701-1,000	(1) table top

Table 44 Food Processors
401-700 Lunches n=41



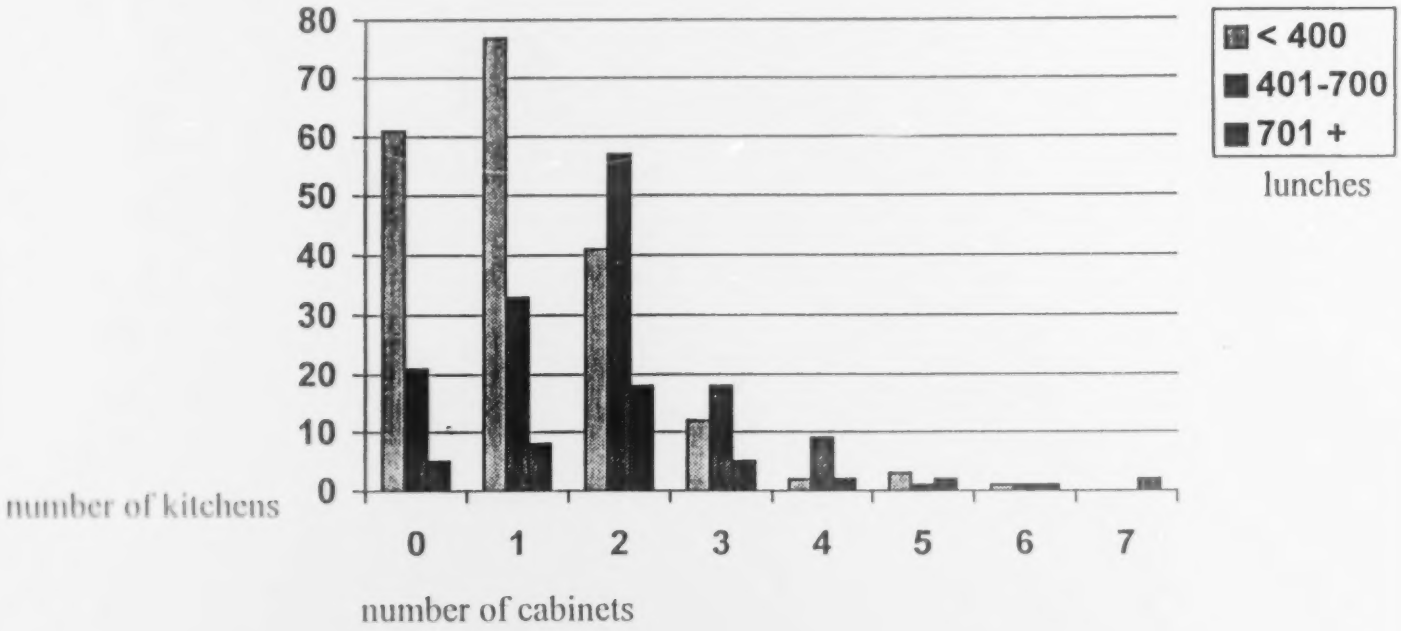
Guidelines	< 400	(1) table top
	401-700	**(1) table top**
	701-1,000	(1) table top

Table 45 Food Processors
701-1,000 Lunches n=24



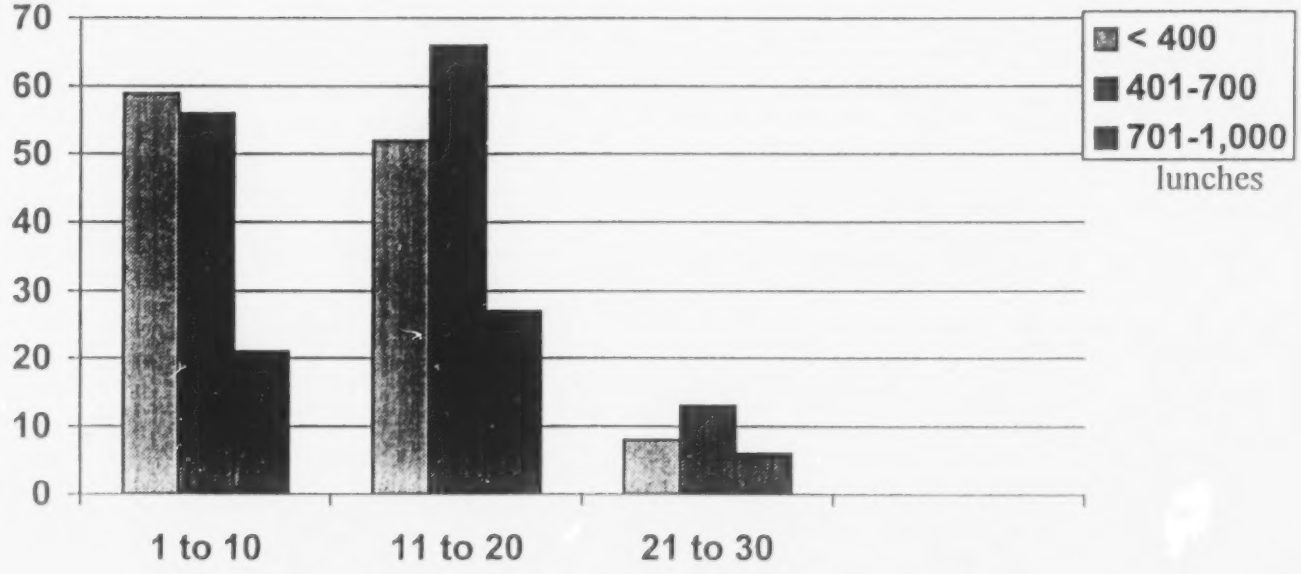
Guidelines	< 400	(1) table top
	401-700	(1) table top
	701-1,000	**(1) table top**

Table 46 Heated Cabinets for Hot Food n=380



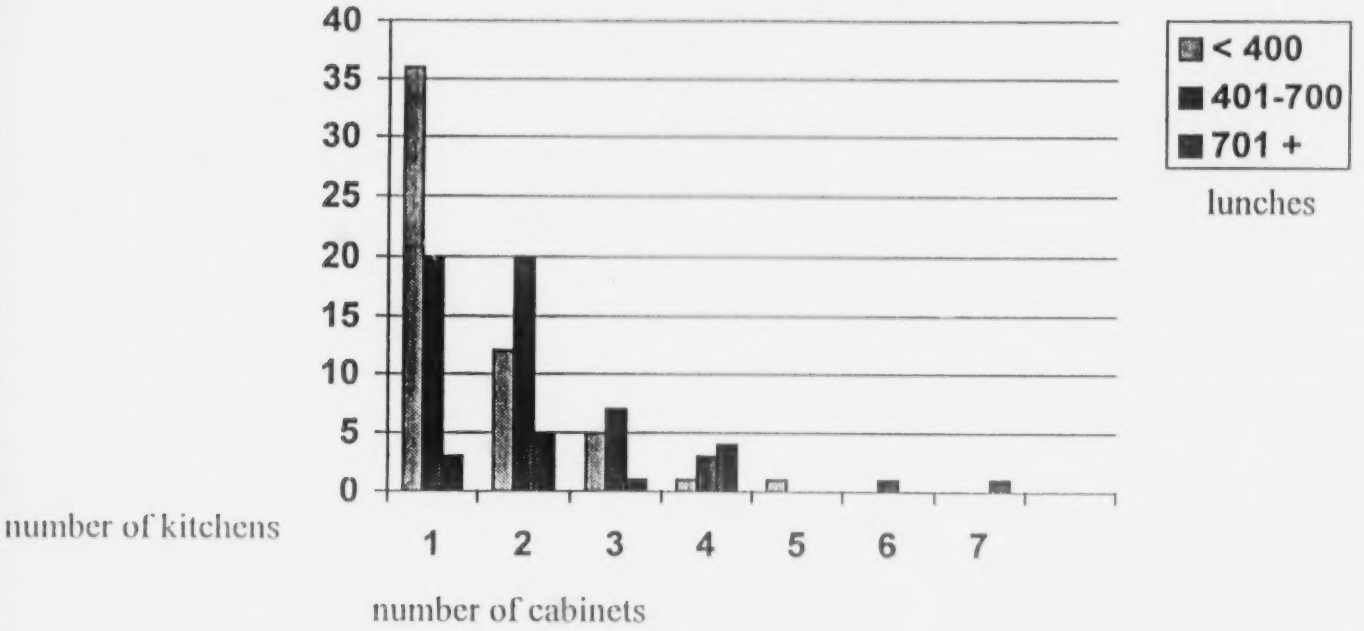
Guidelines		
	< 400	1 section
	401-700	2 section
	701-1,000	3 section

Table 47 Capacity of Heated Cabinets
Full Steamtable Pans n=308



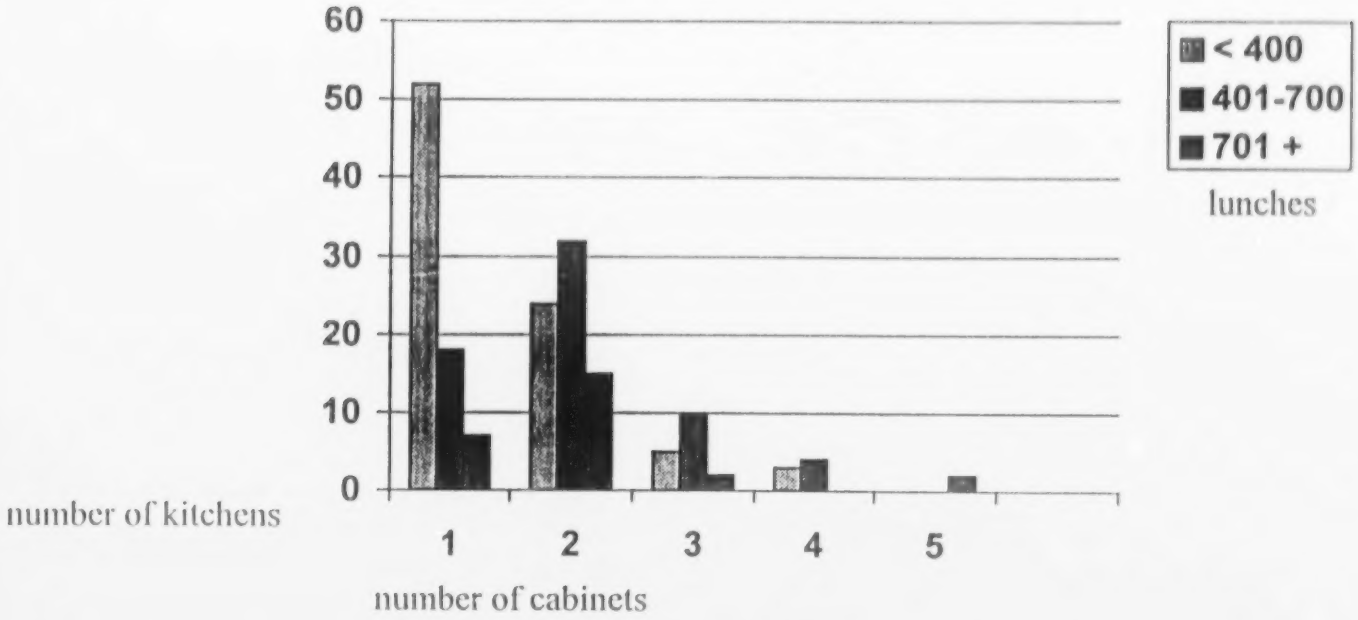
Guidelines	< 400	1 section (24-26 pans)
	401-700	2 section (48-52 pans)
	701-1,000	3 section (72-78 pans)

Table 48 Holding Cabinets Heated Not Insulated n=120



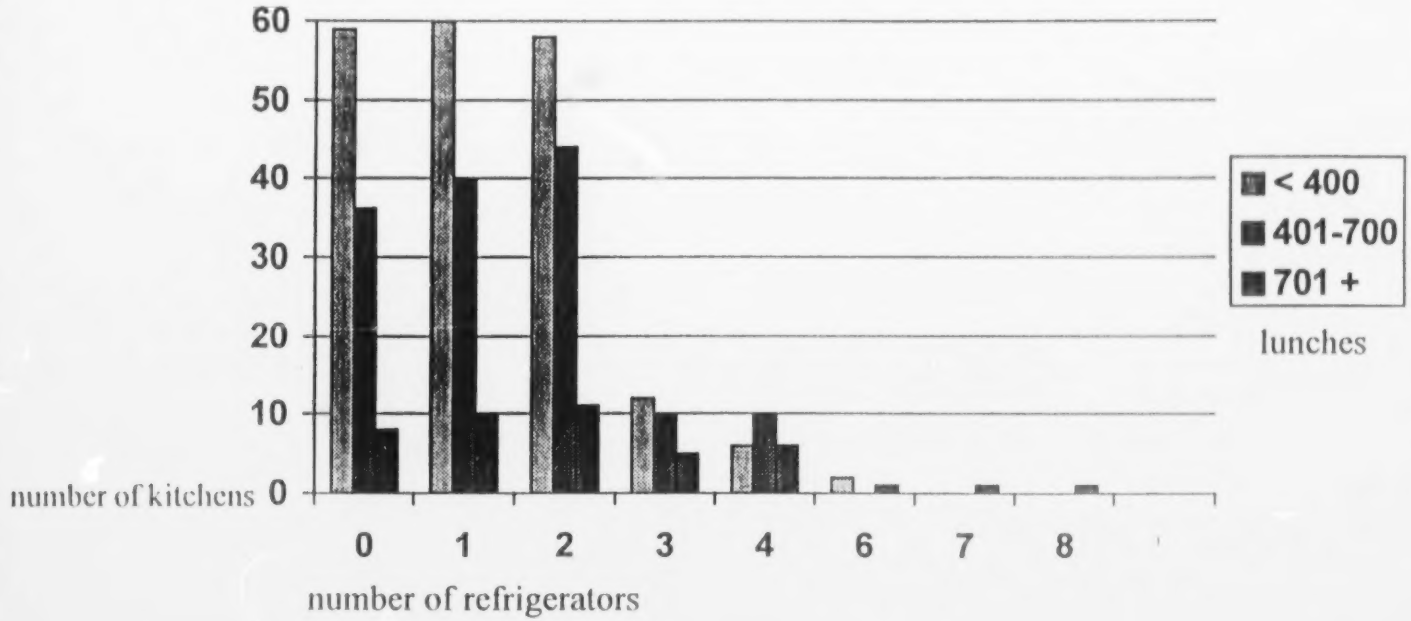
Guidelines		
	< 400	1 section
	401-700	2 section
	701-1,000	3 section

Table 49 Holding Cabinets Heated and Insulated n=174



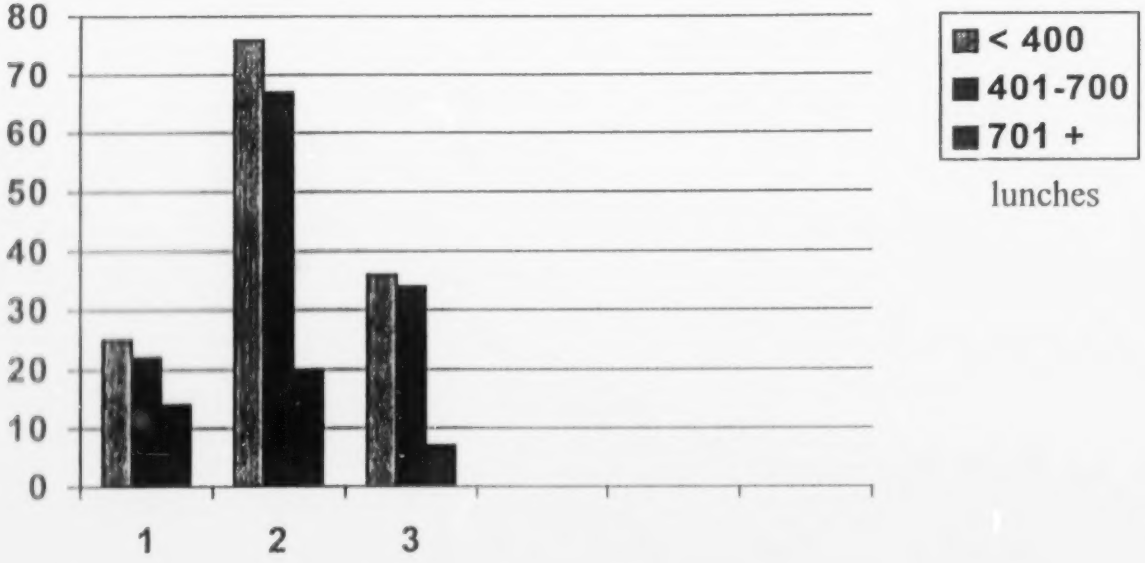
Guidelines		
	< 400	1 section
	401-700	2 section
	701-1,000	3 section

Table 50 Reach-in or Pass Through Refrigerators n=380



Guidelines	< 400	1 section
Reach-in or	401-700	2 section
Pass-through	701-1,000	2 section

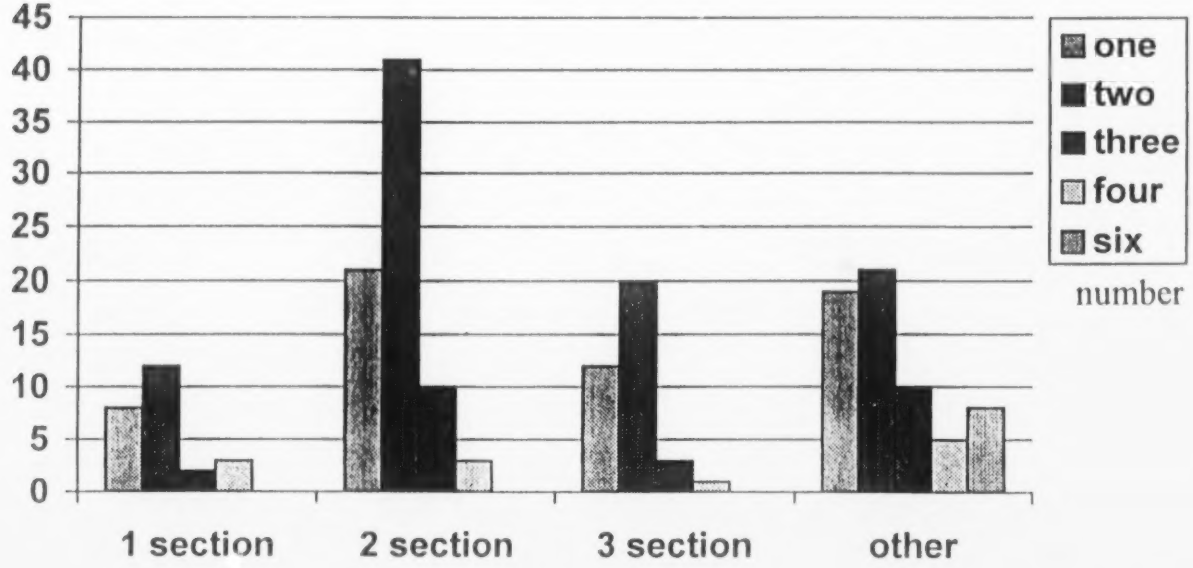
Table 51 Capacity of Refrigerators Reach-in or Pass-Through Number of Sections n=380



Guidelines	< 400	1 section
Reach-in or	401-700	2 section
Pass-through	701-1,000	2 section

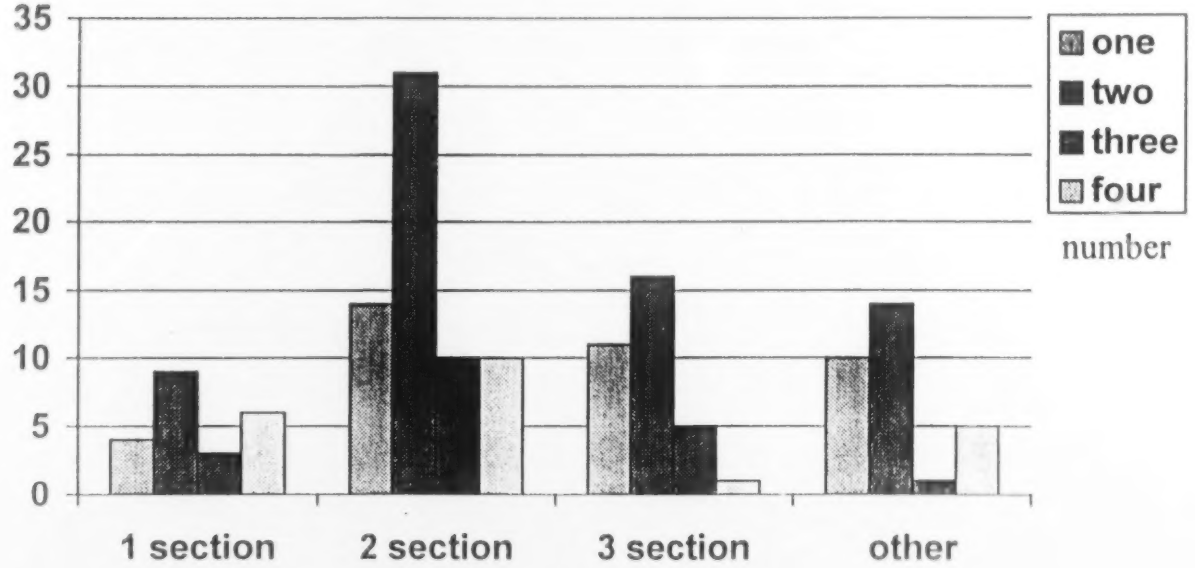
110

Table 52 Reach-in or Pass Through Refrigerators < 400 Lunches n=138



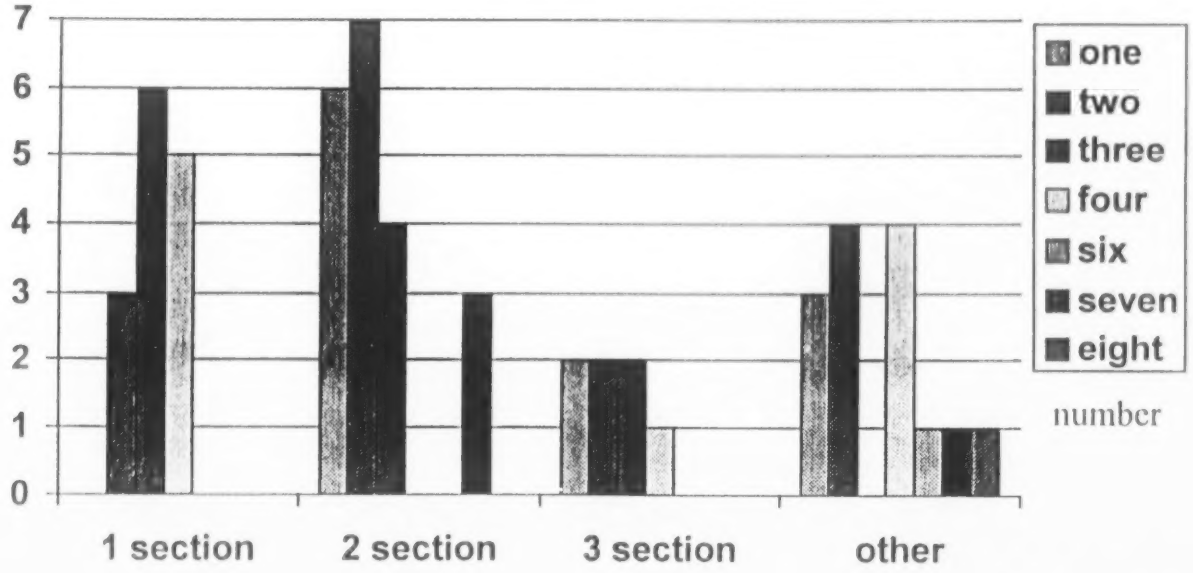
Guidelines	**< 400**	**1 section**
Reach-in or	401-700	2 section
Pass-through	701-1,000	2 section

Table 53 Reach-in or Pass Through Refrigerators
401-700 Lunches n=104



Guidelines	< 400	1 section
Reach-in or	**401-700**	**2 section**
Pass-through	701-1,000	2 section

Table 54 Reach-in or Pass Through Refrigerators 701-1,000 Lunches n=35



Guidelines	< 400	1 section
Reach-in or	401-700	2 section
Pass-through	**701-1,000**	**2 section**

APPENDIX

National Food Service Management Institute

Division of Applied Research
The University of Southern Mississippi
Box 10077 • Hattiesburg, MS 39406-0077
601-266-5773 • FAX: 601-266-4682

March 16, 1995

Dear District Food Service Director/Supervisor,

Thank you for your response last fall to the first questionnaire in the research project on equipment use in school kitchens that is being conducted by the National Food Service Management Institute. As we indicated at that time a second mailing would occur this spring to obtain information about equipment in one of your kitchens.

This questionnaire contains a list of approximately 20 different pieces of equipment that might be found in your kitchen. The questionnaire appears long because extra space is provided for recording information on more than one piece of the same equipment. **Attached to this questionnaire is a card indicating which kitchen we would like you to use for this equipment assessment.** Completing the questionnaire should take only 15 to 20 minutes of your time. You may find it helpful to involve the manager at the kitchen to assist you in completing the questions to assure accuracy. The questionnaire is numbered only to assist us with contacting nonrespondents. Your individual responses will remain strictly confidential; results will be reported in summary form only. A postage-paid, return envelope is enclosed to facilitate mailing your questionnaire back.

Thank you for your assistance with this project. Having your input is critical to the success of this study. Please write or call if we can provide any additional information about the study.

Sincerely,

Mary Frances Nettles

Mary Frances Nettles, PhD, RD
Research Scientist

c: J. Martin
R. Maize

NATIONAL FOOD SERVICE MANAGEMENT INSTITUTE
Refrigeration & Service Equipment

Instructions for completing this questionnaire are included on a separate page.

Refrigerators

1. Do you have any **walk-in refrigerators** in this kitchen?
___ no, go to Q2
___ yes, how many? _____

Please provide the following information for each walk-in refrigerator:

What is the approximate interior dimension of each?	What is the approximate age of each?			What condition is each one in?				
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG

2. Do you have any **reach-in or pass-through refrigerators** in this kitchen?
___ no, go to Q3
___ yes, how many reach-in? _____
how many pass-through? _____

Please provide the following information for each reach-in or pass-through refrigerator:

Indicate number of full-length sections.	What is the approximate age of each?			What condition is each one in?				
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG

3. Do you have any **under counter refrigerators** in this kitchen?
___ no, go to Q4
___ yes, how many? _____

Please provide the following information for each under counter refrigerator:

Indicate number of sections.	What is the approximate age of each?			What condition is each one in?				
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG

Freezers

4. Do you have any **walk-in freezers** in this kitchen?
___ no, go to Q5
___ yes, how many? _____

Please provide the following information for each walk-in freezer:

What is the approximate internal dimension of each?	What is the approximate age of each?			What condition is each one in?				
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG

___ no, go to Q6
___ yes, how many? _____

Please provide the following information for each chest freezer:

What is the approximate internal dimension of each?	What is the approximate age of each?			What condition is each one in?				
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG

6. Do you have any **reach-in or pass-through freezers** in this kitchen?
___ no, go to Q7
___ yes, how many? _____

Please provide the following information for each reach-in or pass-through freezer:

Indicate number of full-length sections.	What is the approximate age of each?			What condition is each one in?				
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG

7. Do you have any **under counter freezers** in this kitchen?
___ no, go to Q8
___ yes, how many? _____

Please provide the following information for each under counter freezer:

Indicate number of sections.	What is the approximate age of each?			What condition is each one in?				
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG

8. Do you have any **ice machines** in this kitchen?
___ no, go to Q9
___ yes, how many? _____

Please provide the following information for each ice machine:

What is the approximate bin capacity of each?	What is the approximate age of each?			What condition is each one in?				
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG

Holding Cabinets

9. Do you have any **holding cabinets for COLD food items** in this kitchen? (This does not include reach-in or pass-through refrigerators).
___ no, go to Q10
___ yes, how many? _____
How many of these holding cabinets are **electrically cooled but not insulated?** _____
How many are **electrically cooled and insulated?** _____
How many are **insulated only and not cooled?** _____

Please provide the following information for each cold holding cabinet:

Indicate the 18" x 26" bun pan capacity of each.	What is the approximate age of each?			What condition is each one in?				
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG

10. Do you have any **holding cabinets for HOT food items** in this kitchen?
___ no, go to Q11
___ yes, how many? _____
How many of these holding cabinets are **electrically heated but not insulated**? _____
How many are **electrically heated and insulated**? _____
How many are **insulated only and not heated**? _____

Please provide the following information for each hot holding cabinet:

Indicate the full counter or steamtable pan capacity of each.	What is the approximate age of each?			What condition is each one in?				
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG

Cafeteria Serving Counters

11. Do you have any **heated serving units** on your cafeteria serving line in this kitchen?
___ no, go to Q12
___ yes, how many? _____

Please provide the following information for each hot holding unit:

Indicate how many wells in each.	What is the approximate age of each?			What condition is each one in?				
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG

12. Do you have any **cold serving units** on your cafeteria serving line in this kitchen?
___ no, go to Q13
___ yes, how many with a refrigerated cold pan? _____
how many with a refrigerated frost top? _____
how many with an ice pan? _____
how many with a refrigerated display unit? _____

Please provide the following information for each cold serving unit:

Indicate dimension of each.	What is the approximate age of each?			What condition is each one in?				
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG

13. Do you have any **ice cream freezers** on the serving line in this kitchen?
___ no, go to Q14
___ yes, how many? _____

Please provide the following information for each ice cream freezer:

What is the approximate capacity of each?	What is the approximate age of each?			What condition is each one in?				
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG

14. Do you have any **drop-sided milk coolers** in this kitchen?
___ no, go to Q15
___ yes, how many? _____

Please provide the following information for each drop-sided milk cooler:

What is the approximate milk carton capacity of each?	What is the approximate age of each?			What condition is each one in?				
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG
	0-2	3-10	11 or more	VP	P	F	G	VG

15. Do you have any **self-leveling milk coolers** on the serving line in this kitchen?
___ no, go to Q16
___ yes, how many? _____

Please provide the following information for each self-leveling milk cooler:

What is the approximate milk carton capacity of each?	What is the approximate age of each?	What condition is each one in?
	0-2 3-10 11 or more	VP P F G VG
	0-2 3-10 11 or more	VP P F G VG
	0-2 3-10 11 or more	VP P F G VG
	0-2 3-10 11 or more	VP P F G VG

16. Do you have any **juice dispensers** on the serving line in this kitchen?
___ no, go to Q17
___ yes, how many? _____

Please provide the following information for each juice dispenser:

What is the approximate capacity of each?	What is the approximate age of each?	What condition is each one in?
	0-2 3-10 11 or more	VP P F G VG
	0-2 3-10 11 or more	VP P F G VG
	0-2 3-10 11 or more	VP P F G VG
	0-2 3-10 11 or more	VP P F G VG

17. Do you have any **milkshake machines** in this kitchen?
___ no, go to Q18
___ yes, how many? _____

Please provide the following information for each milkshake machine:

Indicate number of dispensers on each.	What is the approximate age of each?	What condition is each one in?	How frequently is each one used?
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5

18. Do you have any **soft-serve ice cream/yogurt dispensers** in this kitchen?
___ no, go to Q19
___ yes, how many? _____

Please provide the following information for each soft-serve ice cream/yogurt dispenser:

Indicate the number of dispensers on each.	What is the approximate age of each?	What condition is each one in?	How frequently is each one used?
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5

19. Do you have any **mobile food bars** that are used to serve food in the cafeteria?
___ no, go to Q20
___ yes, how many? _____
What food items are served from these bars? _____

Please provide the following information for each mobile food bar:

What is the approximate size of each?	What is the approximate age of each?	What condition is each one in?	How frequently is each one used?
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5

20. Do you have any **mobile food carts/kiosks** that are used to serve food items in areas separate from the cafeteria?

___ no
___ yes, how many? _____
What food items are served from these carts? _____

Please provide the following information for each mobile food cart/kiosk:

What is the approximate size of each?	What is the approximate age of each?	What condition is each one in?	How frequently is each one used?
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5

School Information

1. What grades are in this school?

_____

2. What is the average number of meals (including adults) prepared each day in this school?

_____ breakfast
_____ lunch

3. Do you offer menu choices in this school?

_____ no
_____ yes
Number of entree choices_____
Number of vegetable choices, not including salad bar _____
Number of vegetable choices on salad bar, if offered _____
Number of fruit choices_____

4. How many serving lines do you have in this school?

_____

5. Do you offer a la carte in this school?

_____ no
_____ yes - what items are offered:

_____

6. Which, if any, of the following menu items are offered daily (4-5 times/week) in this school? (check all that apply)

_____ hamburger/cheeseburger
_____ hot dog
_____ pizza
_____ fried chicken
_____ french fries
_____ baked potato
_____ chef salad
_____ fruit juice
_____ fresh fruit
_____ salad bar
_____ other, please indicate:

_____

7. Do you include "offer vs. serve" in this school?

_____ no
_____ yes

Additional Information

1. Please indicate any new production or service equipment you have purchased for your school district in the past three years:

2. Please indicate any new production or service equipment you intend to purchase for your school district in the next two years:

3. What would you like to see offered by equipment manufacturers that currently does not exist?

Thank you for your assistance with this research.

Return to: Mary Frances Nettles, PhD, RD
National Food Service Management Institute
Box 10077
Hattiesburg, MS 39406-0077

National Food Service Management Institute

Division of Applied Research
The University of Southern Mississippi
Box 10077 • Hattiesburg, MS 39406-0077
601-266-5773 • FAX: 601-266-4682

March 16, 1995

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Sincerely,

Mary Frances Nettles

Mary Frances Nettles, PhD, RD
Research Scientist

c: J. Martin
R. Maize

NATIONAL FOOD SERVICE MANAGEMENT INSTITUTE
Food Production Equipment

Instructions for completing this questionnaire are included on a separate page.

Food Preparation Equipment

1. Do you have any **mixers** in this kitchen?
___ no, go to Q2
___ yes, how many? _____

Please provide the following information for each mixer:

What is the capacity of each? (20qt, 40qt etc)	What is the approximate age of each?	What condition is each one in?	How frequently is each one used?
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5

2. Do you have any **vertical cutter mixers** in this kitchen?
___ no, go to Q3
___ yes, how many? _____

Please provide the following information for each mixer:

What is the capacity of each? (25qt, 40qt etc)	What is the approximate age of each?	What condition is each one in?	How frequently is each one used?
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5

3. Do you have any **food processors** in this kitchen?
___ no, go to Q4
___ yes, how many? _____

Please provide the following information for each food processor:

Give a brief description.	What is the approximate age of each?	What condition is each one in?	How frequently is each one used?
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5

4. Do you have any food **cutters/choppers** in this kitchen?
___ no, go to Q5
___ yes, how many? _____

Please provide the following information for each food cutter/chopper:

Give a brief description.	What is the approximate age of each?	What condition is each one in?	How frequently is each one used?
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5

5. Do you have any **slicers** in this kitchen?
___ no, go to Q6-A
___ yes, how many? _____
Are any of the slicers automatic?
___no
___yes

Please provide the following information for each slicer:

Give a brief description.	What is the approximate age of each?	What condition is each one in?	How frequently is each one used?
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5

Ranges

6-A. Do you have any **ranges** in this kitchen?
___ no, go to Q7
___ yes, how many? _____

6-B. Do any of these ranges have a **fry top/griddle**?
___ no
___ yes, how many? _____
What is the left to right length of each? _____

6-C. Do any of these ranges have **burners**?
___ no
___ yes, how many total burners in this kitchen? _____

6-D. Do any of these ranges have a **flat top/hot plate heating surface**?
___ no
___ yes, how many? _____
What is the left to right length of each? _____

Please provide the following information for each range:

Give a brief description. (10 burner, etc.)	What is the approximate age of each?	What condition is each one in?	How frequently is each one used?
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5

Ovens

7. Do you have any **ovens under a range**?
___ no, go to Q8
___ yes, how many? _____

Please provide the following information for each under range oven:

Give a brief description.	What is the approximate age of each?	What condition is each one in?	How frequently is each one used?
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5

8. Do you have any **convection ovens** in this kitchen?
___ no, go to Q9
___ yes, how many? _____

Please provide the following information for each convection oven:

Indicate whether each is single or double.	What is the approximate age of each?	What condition is each one in?	How frequently is each one used?
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5

9. Do you have any **deck ovens/stack ovens** in this kitchen?
___ no, go to Q10
___ yes, how many? _____

Please provide the following information for each deck oven:

Indicate number of decks per oven.	What is the approximate age of each?	What condition is each one in?	How frequently is each one used?
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5

10. Do you have any **conveyor ovens** in this kitchen?
___ no, go to Q11
___ yes, how many? _____

Please provide the following information for each conveyor oven:

Give a brief description.	What is the approximate age of each?	What condition is each one in?	How frequently is each one used?
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5

11. Do you have any **revolving tray ovens** in this kitchen?
___ no, go to Q12
___ yes, how many? _____

Please provide the following information for each revolving tray oven:

Give a brief description.	What is the approximate age of each?	What condition is each one in?	How frequently is each one used?
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5

12. Do you have any **roll-in ovens** in this kitchen?
___ no, go to Q13
___ yes, how many? _____

Please provide the following information for each roll-in oven:

Give a brief description.	What is the approximate age of each?	What condition is each one in?	How frequently is each one used?
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5

13. Do you have any **microwave ovens** in this kitchen?
___ no, go to Q14
___ yes, how many? _____

Please provide the following information for each microwave oven:

Give a brief description.	What is the approximate age of each?	What condition is each one in?	How frequently is each one used?
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5

Steam Equipment

14. Do you have any **combination convection oven/steamers** in this kitchen?
___ no, go to Q15
___ yes, how many? _____

Please provide the following information for each combination convection oven/steamer:

Indicate size (half or full, single or double).	What is the approximate age of each?	What condition is each one in?	How frequently is each one used?
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5

15. Do you have any **pressureless/convection steamers** in this kitchen?
___ no, go to Q16
___ yes, how many? _____

Please provide the following information for each pressureless/convection steamer:

Indicate number of compartments.	What is the approximate age of each?	What condition is each one in?	How frequently is each one used?
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5

16. Do you have any **low pressure (5 psi) steamers** in this kitchen?
___ no, go to Q17
___ yes, how many? _____

Please provide the following information for each low pressure steamer:

Indicate number of compartments.	What is the approximate age of each?	What condition is each one in?	How frequently is each one used?
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5

17. Do you have any **high pressure steamers** (15 psi) in this kitchen?
___ no, go to Q18
___ yes, how many? _____

Please provide the following information for each high pressure steamer:

Indicate number of compartments.	What is the approximate age of each?	What condition is each one in?	How frequently is each one used?
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5

18. Do you have any **steam jacketed kettles** in this kitchen?
___ no, go to Q19
___ yes, how many? _____

Please provide the following information for each steam jacketed kettle:

What is the capacity of each? (20qt, 40gal, etc)	What is the approximate age of each?	What condition is each one in?	How frequently is each one used?
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5

Other Equipment

19. Do you have any **tilting braising pans** in this kitchen?
___ no, go to Q20
___ yes, how many? _____

Please provide the following information for each tilting braising pan:

What is the capacity of each? (30gal, 40gal, etc)	What is the approximate age of each?	What condition is each one in?	How frequently is each one used?
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5

20. Do you have any **griddles** in this kitchen?
___ no, go to Q21
___ yes, how many? _____

Please provide the following information for each griddle:

What is the size of each? (24in, 36in, etc)	What is the approximate age of each?	What condition is each one in?	How frequently is each one used?
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5

21. Do you have any **broilers** in this kitchen?
___ no, go to Q22
___ yes, how many? _____

Please provide the following information for each broiler:

Give a brief description.	What is the approximate age of each?	What condition is each one in?	How frequently is each one used?
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5

22. Do you have any **conveyor broilers** in this kitchen?
___ no, go to 23
___ yes, how many? _____

Please provide the following information for each conveyor broiler:

Give a brief description.	What is the approximate age of each?	What condition is each one in?	How frequently is each one used?
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5
	0-2 3-10 11 or more	VP P F G VG	1 2 3 4 5

23. Do you have any **deep fat fryers** in this kitchen?
___ no
___ yes, how many? _____

Do you filter the fat?
___ no
___ yes, describe how _____

Please provide the following information for each fryer:

What are the approximate fry bin dimensions?	What is the approximate age of each?	What condition is each one in?	How frequently is each one used?
	< 3 3-10 > 10	VP P F G VG	1 2 3 4 5
	< 3 3-10 > 10	VP P F G VG	1 2 3 4 5
	< 3 3-10 > 10	VP P F G VG	1 2 3 4 5
	< 3 3-10 > 10	VP P F G VG	1 2 3 4 5

School Information

1. What grades are in this school?

   _____

2. What is the average number of meals (including adults) prepared each day in this school?

   _____ breakfast
   _____ lunch

3. Do you offer menu choices in this school?

   _____ no
   _____ yes
   Number of entree choices_____
   Number of vegetable choices, not including salad bar _____
   Number of vegetable choices on salad bar, if offered _____
   Number of fruit choices_____

4. How many serving lines do you have in this school?

   _____

5. Do you offer a la carte in this school?

   _____ no
   _____ yes - what items are offered:

   _____

6. Which, if any, of the following menu items are offered daily (4-5 times/week) in this school? (check all that apply)

   _____ hamburger/cheeseburger
   _____ hot dog
   _____ pizza
   _____ fried chicken
   _____ french fries
   _____ baked potato
   _____ chef salad
   _____ fruit juice
   _____ fresh fruit
   _____ salad bar
   _____ other, please indicate:

   _____

7. Do you include "offer vs. serve" in this school?

   _____ no
   _____ yes

Additional Information

1. Please indicate any new production or service equipment you have purchased for your school district in the past three years:

2. Please indicate any new production or service equipment you intend to purchase for your school district in the next two years:

3. What would you like to see offered by equipment manufacturers that currently does not exist?

Thank you for you assistance with this research.

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